



10165-022-999 (substitute - 6-16-08) .txt
SEQUENCE LISTING

<110> Nielsen, J.
Pedersen, J.
Görwien, J.
Bay, K.
Pedersen, L.
Leist, M.
Geist, M.
Kallunki, P.
Christensen, S.
Sager, T.
Brines, M.
Cerami, A.
Cerami, C.

<120> RECOMBINANT TISSUE PROTECTIVE CYTOKINES AND ENCODING NUCLEIC ACIDS THEREOF FOR PROTECTION, RESTORATION, AND ENHANCEMENT OF RESPONSIVE CELLS, TISSUES AND ORGANS

<130> 10165-022-999

<140> 10/612,665
<141> 2003-07-01

<150> 60/392,455
<151> 2002-07-01

<150> 60/393,423
<151> 2002-07-03

<160> 211

<170> PatentIn version 3.2

<210> 1
<211> 5
<212> PRT
<213> Homo sapiens

<400> 1

Val Leu Gln Arg Tyr
1 5

<210> 2
<211> 8
<212> PRT
<213> Homo sapiens

<400> 2

Thr Lys Val Asn Phe Tyr Ala Trp
1 5

<210> 3
<211> 9
<212> PRT
<213> Homo sapiens

<400> 3

10165-022-999 (substitute - 6-16-08) .txt

Ser Gly Leu Arg Ser Leu Thr Thr Leu
1 5

<210> 4
<211> 6
<212> PRT
<213> Homo sapiens

<400> 4

Ser Asn Phe Leu Arg Gly
1 5

<210> 5
<211> 6059
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: plasmid

<400> 5
ctagagtcga cccgggcggc cgcttccctt tagtgagggt taatgcttcg agcagacatg 60
ataagataca ttgatgagtt tggacaaacc acaactagaa tgcaagtaaa aaaatgcttt 120
atttgtgaaa tttgtgatgc tattgctta tttgtAACCA ttataagctg caataaacaa 180
gttaacaaca acaattgcat tcattttatg tttcaggttc agggggagat gtgggagggtt 240
ttttaaagca agtaaaacct ctacaaatgt ggtaaaatcc gataaggatc gatccgggct 300
ggcgtaatag cgaagaggcc cgaccgatc gccctccca acagttgcgc agcctgaatg 360
gcgaatggac gcgcctgta gcggcgcatt aagcgcggcg ggtgtggtgg ttacgcgcag 420
cgtgaccgct acacttgcca gcgccttagc gccgcctcct ttcgcttct tcccttcctt 480
tctcgccacg ttccggcgtt ttccccgtca agctctaaat cgggggctcc ctttagggtt 540
ccgatttagt gctttacggc acctcgaccc caaaaaactt gattagggtg atggttcacg 600
tagtgggcca tcgcctgat agacggttt tcgccttgc acgttggagt ccacgttctt 660
taatagtgga ctctgttcc aaactggaac aacactcaac cctatctcggt tctattctt 720
tgatttataa gggattttgc cgatttcggc ctattggta aaaaatgagc tgatttaaca 780
aaaatttaac gcgaattttt acaaaatatt aacgcttaca atttcgtat gcggtatTTT 840
ctccttacgc atctgtgcgg tatttcacac cgcatacgcg gatctgcgc gacccatggc 900
ctgaaataac ctctgaaaga ggaacttggt taggtacctt ctgaggcgg aagaaccagc 960
tgtgaaatgt gtgtcagttt ggggtggaa agtccccagg ctccccagca ggcagaagta 1020
tgcaaagcat gcatctcaat tagtcagcaa ccaggtgtgg aaagtccccca ggctccccag 1080
caggcagaag tatgcaaagc atgcattctca attagtcagc aaccatagtc ccgccttaa 1140

10165-022-999 (substitute - 6-16-08) .txt

ctccgccccat	cccgccccata	actccgccccaa	gttccgccccaa	ttctccgccccaa	catggctgac	1200
taattttttt	tatTTATGCA	gaggCCGAGG	ccgcCTCGGC	ctctgagcta	ttccagaagt	1260
agtgaggagg	cttttttGGA	ggcctaggct	tttgcaaaaa	gcttgattct	tctgacacaa	1320
cagtctcgaa	cttaaggcta	gagccaccat	gattgaacaa	gatggattgc	acgcaggttc	1380
tccggccgct	tgggtggaga	ggctattcgg	ctatgactgg	gcacaacaga	caatcggtcg	1440
ctctgatgcc	gccgtgttcc	ggctgtcagc	gcaggggcgc	ccggttcttt	ttgtcaagac	1500
cgacctgtcc	ggtGCCCTGA	atgaactgca	ggacgaggca	gcgcggctat	cgtggctggc	1560
cacgacgggc	gttccttgcg	cagctgtgct	cgacgttgct	actgaagcgg	gaagggactg	1620
gctgttattg	ggcgaagtgc	cggggcagga	tctcctgtca	tctcaccttgc	ctcctgcccga	1680
gaaagtatcc	atcatggctg	atgcaatgcg	gcggctgcat	acgcttgate	cggctacactg	1740
cccattcgac	caccaagcga	aacatcgcat	cgagcgagca	cgtactcgga	tggaagccgg	1800
tcttgcgtat	caggatgatc	tggacgaaga	gcatcaggggg	ctcgccag	ccgaactgtt	1860
cgccaggctc	aaggcgcgca	tgcccacgg	cgaggatctc	gtcgtgaccc	atggcgatgc	1920
ctgcttgcgg	aatatcatgg	tggaaaatgg	ccgctttct	ggattcatcg	actgtggccg	1980
gctgggtgtg	gcggaccgct	atcaggacat	agcgttggct	acccgtgata	ttgctgaaga	2040
gcttggccgc	aatgggctg	accgcttcct	cgtgcttac	ggtatcgccg	ctcccgattc	2100
gcagcgcac	gccttctatc	gccttcttga	cgagtttttc	ttagcgggac	tctggggttc	2160
gaaatgaccg	accaagcgcac	gcccaacctg	ccatcacgat	ggccgcaata	aaatatctt	2220
attttcatta	catctgtgtg	ttggtttttt	gtgtgaatcg	atagcgataa	ggatccgcgt	2280
atgggtgcact	ctcagtacaa	tctgctctga	tgccgcatacg	ttaagccagc	cccgacaccc	2340
gccaacaccc	gctgacgcgc	cctgacgggc	ttgtctgctc	ccggcatccg	cttacagaca	2400
agctgtgacc	gtctccggga	gctgcatgtg	tcagaggttt	tcaccgtcat	caccgaaacg	2460
cgcgagacga	aagggcctcg	tgatacgcct	atttttatag	gttaatgtca	tgataataat	2520
ggtttcttag	acgtcaggtg	gcactttcg	gggaaatgtg	cgcggAACCC	ctatttgttt	2580
atttttctaa	atacattcaa	atatgttatcc	gctcatgaga	caataaccct	gataaatgct	2640
tcaataataat	tgaaaaagga	agagtatgag	tattcaacat	ttccgtgtcg	cccttattcc	2700
ctttttgcg	gcattttgcc	ttcctgtttt	tgctcacccaa	gaaacgctgg	tgaaagtaaa	2760
agatgctgaa	gatcagtgg	gtgcacgagt	gggttacatc	gaactggatc	tcaacagcgg	2820
taagatcctt	gagagtttc	gccccgaaga	acgtttcca	atgatgagca	cttttaaagt	2880
tctgctatgt	ggcgcggat	tatcccgtat	tgacGCCGGG	caagagcaac	tcggcgcgg	2940
catacactat	tctcagaatg	acttgggtga	gtactcacca	gtcacagaaa	agcatttac	3000
ggatggcatg	acagtaagag	aattatgcag	tgctgcccata	accatgagtg	ataacactgc	3060

10165-022-999 (substitute - 6-16-08) .txt

ggccaactta cttctgacaa cgatcgagg accgaaggag ctaaccgctt tttgcacaa	3120
catggggat catgtactc gcctgatcg ttggAACCG gagctaatg aagccatacc	3180
aaacgacgag cgtgacacca cgatgcgt agcaatggca acaacgtgc gcaaactatt	3240
aactggcgaa ctacttactc tagcttccc gcaacaatta atagactgga tggaggcgga	3300
taaagttgca ggaccacttc tgcgctcgcc cttccggct ggctggtttta ttgctgataa	3360
atctggagcc ggtgagcgtg ggtctcgcc tatcattgca gcactggggc cagatggtaa	3420
gccctccgt atcgttagtta tctacacgac ggggagtcag gcaactatgg atgaacgaaa	3480
tagacagatc gctgagatag gtgcctact gattaagcat tggtaactgt cagaccaagt	3540
ttactcatat atactttaga ttgatTTAA acttcatttt taatTTAAA ggatcttagt	3600
gaagatcctt tttgataatc tcatgaccaaa aatcccttaa cgtgagttt cgttccactg	3660
agcgtcagac cccgtagaaa agatcaaagg atcttcttga gatcTTTT ttctgcgcgt	3720
aatctgctgc ttgcaaacaa AAAAACCACC gctaccagcg gtggTTTGTG tgccggatca	3780
agagctacca actcttttc cgaaggtaac tggcttcagc agagcgcaga taccaaatac	3840
tgttcttcta gtgttagccgt agttaggcca ccacttcaag aactctgttag caccgcctac	3900
atacctcgct ctgctaattcc ttttaccagt ggctgctgcc agtggcgata agtcgtgtct	3960
taccgggttg gactcaagac gatagttacc ggataaggcg cagcggtcgg gctgaacggg	4020
gggttcgtgc acacagccca gctggagcg aacgacctac accgaactga gataacctaca	4080
gcgtgagcta tgagaaagcg ccacgcttcc cgaaggaga aaggcggaca ggtatccggt	4140
aagcggcagg gtcggAACAG gagagcgcac gagggagctt ccagggggaa acgcctggta	4200
tctttatagt cctgtcggtt ttccacact ctgacttgag cgtcatttt tgtgatgctc	4260
gtcagggggg cggagcctat ggaaaaacgc cagcaacgag gcTTTTTAC ggTTCTGGC	4320
cTTTGTGG cTTTGTCT acatggctcg acagatctt aatattggcc attagccata	4380
ttattcattt gttatatacg ataaatcaat attggctatt ggccattgca tacgttgtat	4440
ctatatata atatgtacat ttatattggc tcatgtccaa tatgaccgccc atgttggcat	4500
tgattattga ctatTTTTTA atagtaatca attacgggtt cattagttca tagccatat	4560
atggagttcc gcgttacata acttacggta aatggcccgc ctggctgacc gcccacgac	4620
ccccccccat tgacgtcaat aatgacgtat gttccatag taacgccaat agggactttc	4680
cattgacgtc aatgggtgga gtatTTACGG taaactgccc acttggcagt acatcaagtg	4740
tatcatatgc caagtccGCC ccctattgac gtcaatgacg gtaaatggcc cgcctggcat	4800
tatGCCAGT acatgacctt acgggacttt cctacttggc agtacatcta cgtattagtc	4860
atcgcttta ccatggtgat gcggTTTGG cagtacacca atgggcgtgg atagcggttt	4920

10165-022-999 (substitute - 6-16-08) .txt

gactcacggg gatttccaag tctccacccc attgacgtca atgggagttt gttttggcac	4980
caaaatcaac gggactttcc aaaatgtcgt aacaactgcg atcgcccgcc ccgttgacgc	5040
aaatgggcgg taggcgtgta cgggtggagg tctatataag cagagctcgt ttagtgaacc	5100
gtcagatcac tagaagcttt attgcggtag tttatcacag ttaaattgct aacgcagtca	5160
gtgcttctga cacaacagtc tcgaacttaa gctgcagtga ctctcttaag gtagccttgc	5220
agaagtttgt cgtgaggcac tgggcaggta agtatcaagg ttacaagaca ggtttaagga	5280
gaccaataga aactgggctt gtcgagacag agaagactct tgcgttctg ataggcacct	5340
attggtctta ctgacatcca ctggccttt ctctccacag gtgtccactc ccagttcaat	5400
tacagctctt aaggctagag tacttaatac gactcactat aggctagcct cgagcgcgga	5460
gatgggggtg cacgaatgtc ctgcctggct gtggcttctc ctgtccctgc tgtcgctccc	5520
tctgggcctc ccagtcctgg gcgcacc accgcctcatc tgtgacagcc gagtcctgga	5580
gaggtacctc ttggaggcca aggaggccga gaatatcacf acgggctgtg ctgaacactg	5640
cagcttgaat gagaatatca ctgtcccaga caccgacgtt aatttctatg cctggaagag	5700
gatggaggtc gggcagcagg ccgtagaagt ctggcaggc ctggccctgc tgtcgaaagc	5760
tgtcctgcgg ggccaggccc tggtggcaa ctctccctag ccgtggagc ccctgcagct	5820
gcatgtggat aaagccgtcg agggcattcg cagcctcacc actctgttcc gggctctgcg	5880
agcccagaag gaagccatct cccctccaga tgcggcctca gctgctccac tccgaacaat	5940
cactgctgac actttccgca aactcttccg agtctactcc aatttctcc gggaaagct	6000
gaagctgtac acaggggagg cctgcaggac aggggaccat catcaccatc accattgat	6059

<210> 6
<211> 193
<212> PRT
<213> Homo sapiens

<400> 6

Met Gly Val His Glu Cys Pro Ala Trp Leu Trp Leu Leu Ser Leu
1 5 10 15
Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu
20 25 30
Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu
35 40 45
Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu
50 55 60
Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg
65 70 75 80
Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu
85 90 95
Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser
100 105 110
Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly
115 120 125
Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu

10165-022-999 (substitute - 6-16-08) .txt
130 135 140
Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile
145 150 155 160
Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu
165 170 175
Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp
180 185 190
Arg

<210> 7
<211> 580
<212> DNA
<213> Homo sapiens

<400> 7
atgggggtgc acgaatgtcc tgcctggctg tggcttctcc tgtccctgct gtcgctccct 60
ctgggcctcc cagtcctggg cgccccacca cgcctcatct gtgacagccg agtcctggag 120
aggtaaccttct tggaggccaa ggaggccgag aatatcacga cgggctgtgc tgaacactgc 180
agcttgaatg agaatatcac tgcctccagac accaaagtta atttctatgc ctggaagagg 240
atggaggtcg ggcagcaggc cgtagaagtc tggcagggcc tggccctgct gtcggaagct 300
gtcctgcggg gccaggccct gtttgtcaac tcttcccagc cgtgggagcc cctgcactgc 360
atgtggataa agccgtcagt ggccttcgca gcctcaccac tctgcttcgg gctctggag 420
cccagaagga agccatctcc cctccagatg cggcctcagc tgctccactc cgaacaatca 480
ctgctgacac tttcgcaaac tcttccgagt ctactccaat ttccctccggg gaaagctgaa 540
gctgtacaca ggggaggcct gcaggacagg ggacagatga 580

<210> 8
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 8
agctctcgag gcgcgagat gggggtgcac gaatg 35

<210> 9
<211> 36
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 9
atgccttaga cacacctggc catctgtccc ctgtcc 36

<210> 10

10165-022-999 (substitute - 6-16-08) .txt

<211> 166

<212> PRT

<213> Artificial Sequence

<220>

<223> mutein

<400> 10

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 11

<211> 45

<212> DNA

<213> Artificial

<220>

<223> Description of Artificial Sequence: primer

<400> 11

catgtggata aagccgtcga gggctttcgc agcctcacca ctctg

45

<210> 12

<211> 45

<212> DNA

<213> Artificial

<220>

<223> Description of Artificial Sequence: primer

<400> 12

cagagtggtg aggctgcgaa ggccctcgac ggctttatcc acatg

45

<210> 13

<211> 45

<212> DNA

<213> Artificial

<220>

<223> Description of Artificial Sequence: primer

10165-022-999 (substitute - 6-16-08) .txt

<400> 13
gagaatatca ctgtcccaga caccgacgtt aatttctatg cctgg 45

<210> 14
<211> 45
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 14
ccaggcatag aaattaacgt cggtgtctgg gacagtgata ttctc 45

<210> 15
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 15
Ala Pro Pro Arg Leu Ala Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 16
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 16
Ala Pro Pro Arg Leu Ile Ala Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30

10165-022-999 (substitute - 6-16-08) .txt
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 17
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 17
Ala Pro Pro Arg Leu Ile Cys Asp Ser Ile Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 18
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 18
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Ser Leu Glu Arg Tyr Leu
Page 9

10165-022-999 (substitute - 6-16-08) .txt
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 19
<211> 166
<212> PRT
<213> Artificial sequence

<220>
<223> mutein

<400> 19
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Ala Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 20
<211> 166
<212> PRT
<213> Artificial sequence

<220>
<223> mutein

10165-022-999 (substitute - 6-16-08) .txt

<400> 20
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Ala Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 21
<211> 166
<212> PRT
<213> Artificial sequence

<220>
<223> mutein

<400> 21
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Ala Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 22
<211> 166
<212> PRT
<213> Artificial Sequence

10165-022-999 (substitute - 6-16-08) .txt

<220>
<223> mutein

<400> 22
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 23
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 23
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Glu Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 24

<211> 166

<212> PRT

<213> Artificial Sequence

<220>

<223> mutein

<400> 24

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Gln Tyr Leu
 1 5 10 15
 Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
 20 25 30
 Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
 35 40 45
 Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
 50 55 60
 Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
 65 70 75 80
 Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
 85 90 95
 Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
 100 105 110
 Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
 115 120 125
 Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
 130 135 140
 Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
 145 150 155 160
 Cys Arg Thr Gly Asp Arg
 165

<210> 25

<211> 166

<212> PRT

<213> Artificial Sequence

<220>

<223> mutein

<400> 25

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Ala Leu
 1 5 10 15
 Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
 20 25 30
 Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
 35 40 45
 Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
 50 55 60
 Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
 65 70 75 80
 Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
 85 90 95
 Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
 100 105 110
 Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
 115 120 125
 Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
 130 135 140
 Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
 145 150 155 160
 Cys Arg Thr Gly Asp Arg
 165

<210> 26
<211> 166
<212> PRT
<213> Artificial Sequence.

<220>
<223> mutein

<400> 26
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Phe Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 27
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 27
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Ile Leu
1 5 10 15
Leu Glu Ala Glu Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala

10165-022-999 (substitute - 6-16-08) .txt
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 28
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 28
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Glu Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 29
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 29
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Ala Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125

10165-022-999 (substitute - 6-16-08) .txt
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 30
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 30
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Ala Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 31
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 31
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Lys Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu

10165-022-999 (substitute - 6-16-08) .txt

100	105	110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala		
115	120	125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val		
130	135	140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala		
145	150	155
Cys Arg Thr Gly Asp Arg		
165		

<210> 32
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 32

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu			
1	5	10	15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Ser Ala Glu His			
20	25	30	
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe			
35	40	45	
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp			
50	55	60	
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu			
65	70	75	80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp			
85	90	95	
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu			
100	105	110	
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala			
115	120	125	
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val			
130	135	140	
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala			
145	150	155	160
Cys Arg Thr Gly Asp Arg			
165			

<210> 33
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 33

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu			
1	5	10	15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Tyr Ala Glu His			
20	25	30	
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe			
35	40	45	
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp			
50	55	60	
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu			
65	70	75	80

10165-022-999 (substitute - 6-16-08) .txt
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 34
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 34
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Asn Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 35
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 35
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu Thr
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp

10165-022-999 (substitute - 6-16-08) .txt
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 36
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 36
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Ser Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 37
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 37
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30

10165-022-999 (substitute - 6-16-08) .txt
Tyr Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 38
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 38
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Lys Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 39
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 39
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
Page 20

10165-022-999 (substitute - 6-16-08) .txt
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Lys Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 40
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 40
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Asn Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 41
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

10165-022-999 (substitute - 6-16-08) .txt

<400> 41
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Ala Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 42
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 42
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Ala Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 43
<211> 166
<212> PRT
<213> Artificial Sequence

10165-022-999 (substitute - 6-16-08) .txt

<220>
<223> mutein

<400> 43
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Ile Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 44
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 44
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Asp Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 45

10165-022-999 (substitute - 6-16-08) .txt

<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 45
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Ala Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 46
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 46
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Ala Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

10165-022-999 (substitute - 6-16-08) .txt

<210> 47
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 47
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Ala Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 48
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 48
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Ile
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala

10165-022-999 (substitute - 6-16-08) .txt
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 49
<211> 166
<212> PRT
<213> Artificial sequence

<220>
<223> mutein

<400> 49
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Ala
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 50
<211> 166
<212> PRT
<213> Artificial sequence

<220>
<223> mutein

<400> 50
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Ala Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125

10165-022-999 (substitute - 6-16-08) .txt
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 51
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 51
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Ser Ala Trp Lys Arg Met Glu Val Gly Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 52
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 52
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Phe Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu

10165-022-999 (substitute - 6-16-08) .txt
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 53
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 53
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Asn Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 54
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 54
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Ala Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80

10165-022-999 (substitute - 6-16-08) .txt
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 55
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 55
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Asn Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 56
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 56
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Thr Val Trp

10165-022-999 (substitute - 6-16-08) .txt

50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 57
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 57
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Ser Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 58
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 58
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30

10165-022-999 (substitute - 6-16-08) .txt
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Ala Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 59
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 59
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Arg
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 60
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 60
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
Page 31

10165-022-999 (substitute - 6-16-08) .txt
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Ala Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 61
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 61
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Arg Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 62
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

10165-022-999 (substitute - 6-16-08) .txt

<400> 62

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Glu Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 63

<211> 166

<212> PRT

<213> Artificial Sequence

<220>

<223> mutein

<400> 63

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ala Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 64

<211> 166

<212> PRT

<213> Artificial Sequence

10165-022-999 (substitute - 6-16-08) .txt

<220>
<223> mutein

<400> 64
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Thr Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 65
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 65
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Ala Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 66

<211> 166

<212> PRT

<213> Artificial Sequence

<220>

<223> mutein

<400> 66

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
 1 5 10 15
 Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
 20 25 30
 Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
 35 40 45
 Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
 50 55 60
 Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
 65 70 75 80
 Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
 85 90 95
 Lys Ala Val Ser Ile Leu Arg Ser Leu Thr Leu Leu Arg Ala Leu
 100 105 110
 Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
 115 120 125
 Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
 130 135 140
 Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
 145 150 155 160
 Cys Arg Thr Gly Asp Arg
 165

<210> 67

<211> 166

<212> PRT

<213> Artificial Sequence

<220>

<223> mutein

<400> 67

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
 1 5 10 15
 Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
 20 25 30
 Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
 35 40 45
 Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
 50 55 60
 Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
 65 70 75 80
 Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
 85 90 95
 Lys Ala Val Ser Gly Ala Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
 100 105 110
 Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
 115 120 125
 Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
 130 135 140
 Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
 145 150 155 160
 Cys Arg Thr Gly Asp Arg
 165

<210> 68
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 68
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Ala Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 69
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 69
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Glu Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala

145 Cys Arg Thr Gly Asp Arg
165

10165-022-999 (substitute - 6-16-08) .txt
150 155 160

<210> 70
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 70
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ala Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 71
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 71
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ile Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125

10165-022-999 (substitute - 6-16-08) .txt
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 72
<211> 166
<212> PRT
<213> Artificial sequence

<220>
<223> mutein

<400> 72
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Ala Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 73
<211> 166
<212> PRT
<213> Artificial sequence

<220>
<223> mutein

<400> 73
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Ala Thr Leu Leu Arg Ala Leu

10165-022-999 (substitute - 6-16-08) .txt
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 74
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 74
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Ile Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 75
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 75
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80

10165-022-999 (substitute - 6-16-08) .txt
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Ala Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 76
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 76
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Leu Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 77
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 77
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
Page 40

10165-022-999 (substitute - 6-16-08) .txt

50	55	60													
Gln	Gly	Leu	Ala	Leu	Leu	Ser	Glu	Ala	Val	Leu	Arg	Gly	Gln	Ala	Leu
65					70			75							80
Leu	Val	Asn	Ser	Ser	Gln	Pro	Trp	Glu	Pro	Leu	Gln	Leu	His	Val	Asp
					85			90						95	
Lys	Ala	Val	Ser	Gly	Leu	Arg	Ser	Leu	Thr	Thr	Lys	Leu	Arg	Ala	Leu
					100			105						110	
Gly	Ala	Gln	Lys	Glu	Ala	Ile	Ser	Pro	Pro	Asp	Ala	Ala	Ser	Ala	Ala
					115			120					125		
Pro	Leu	Arg	Thr	Ile	Thr	Ala	Asp	Thr	Phe	Arg	Lys	Leu	Phe	Arg	Val
					130			135					140		
Tyr	Ser	Asn	Phe	Leu	Arg	Gly	Lys	Leu	Lys	Leu	Tyr	Thr	Gly	Glu	Ala
					145			150					155		160
Cys	Arg	Thr	Gly	Asp	Arg										
					165										

<210> 78
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 78

Ala	Pro	Pro	Arg	Leu	Ile	Cys	Asp	Ser	Arg	Val	Leu	Glu	Arg	Tyr	Leu
1				5				10						15	
Leu	Glu	Ala	Lys	Glu	Ala	Glu	Asn	Ile	Thr	Thr	Gly	Cys	Ala	Glu	His
				20				25					30		
Cys	Ser	Leu	Asn	Glu	Asn	Ile	Thr	Val	Pro	Asp	Thr	Lys	Val	Asn	Phe
				35				40				45			
Tyr	Ala	Trp	Lys	Arg	Met	Glu	Val	Gly	Gln	Gln	Ala	Val	Glu	Val	Trp
				50				55				60			
Gln	Gly	Leu	Ala	Leu	Leu	Ser	Glu	Ala	Val	Leu	Arg	Gly	Gln	Ala	Leu
				65				70				75		80	
Leu	Val	Asn	Ser	Ser	Gln	Pro	Trp	Glu	Pro	Leu	Gln	Leu	His	Val	Asp
					85			90					95		
Lys	Ala	Val	Ser	Gly	Leu	Arg	Ser	Leu	Thr	Thr	Ala	Leu	Arg	Ala	Leu
					100			105					110		
Gly	Ala	Gln	Lys	Glu	Ala	Ile	Ser	Pro	Pro	Asp	Ala	Ala	Ser	Ala	Ala
					115			120				125			
Pro	Leu	Arg	Thr	Ile	Thr	Ala	Asp	Thr	Phe	Arg	Lys	Leu	Phe	Arg	Val
					130			135				140			
Tyr	Ser	Asn	Phe	Leu	Arg	Gly	Lys	Leu	Lys	Leu	Tyr	Thr	Gly	Glu	Ala
					145			150				155		160	
Cys	Arg	Thr	Gly	Asp	Arg										
					165										

<210> 79
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 79

Ala	Pro	Pro	Arg	Leu	Ile	Cys	Asp	Ser	Arg	Val	Leu	Glu	Arg	Tyr	Leu
1				5				10						15	
Leu	Glu	Ala	Lys	Glu	Ala	Glu	Asn	Ile	Thr	Thr	Gly	Cys	Ala	Glu	His
				20				25				30			

10165-022-999 (substitute - 6-16-08) .txt
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Ser Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 80
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 80
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Ala Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 81
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 81
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
Page 42

10165-022-999 (substitute - 6-16-08) .txt

1	5	10	15												
Leu	Glu	Ala	Lys	Glu	Ala	Glu	Asn	Ile	Thr	Thr	Gly	Cys	Ala	Glu	His
			20					25					30		
Cys	Ser	Leu	Asn	Glu	Asn	Ile	Thr	Val	Pro	Asp	Thr	Lys	Val	Asn	Phe
			35				40				45				
Tyr	Ala	Trp	Lys	Arg	Met	Glu	Val	Gly	Gln	Gln	Ala	Val	Glu	Val	Trp
			50			55			60						
Gln	Gly	Leu	Ala	Leu	Leu	Ser	Glu	Ala	Val	Leu	Arg	Gly	Gln	Ala	Leu
			65			70			75				80		
Leu	Val	Asn	Ser	Ser	Gln	Pro	Trp	Glu	Pro	Leu	Gln	Leu	His	Val	Asp
					100			90				95			
Lys	Ala	Val	Ser	Gly	Leu	Arg	Ser	Leu	Thr	Thr	Leu	Leu	Arg	Ala	Leu
					105				105			110			
Gly	Ala	Gln	Lys	Glu	Ala	Ile	Ser	Pro	Pro	Asp	Ala	Ala	Ala	Ala	Ala
			115			120			125						
Pro	Leu	Arg	Thr	Ile	Thr	Ala	Asp	Thr	Phe	Arg	Lys	Leu	Phe	Arg	Val
			130			135			140						
Tyr	Ser	Asn	Phe	Leu	Arg	Gly	Lys	Leu	Lys	Leu	Tyr	Thr	Gly	Glu	Ala
			145			150			155				160		
Cys	Arg	Thr	Gly	Asp	Arg										
			165												

<210> 82
<211> 193
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 82

Met	Gly	Val	His	Glu	Cys	Pro	Ala	Trp	Leu	Trp	Leu	Leu	Leu	Ser	Leu
1				5					10				15		
Leu	Ser	Leu	Pro	Leu	Gly	Leu	Pro	Val	Leu	Gly	Ala	Pro	Pro	Arg	Leu
								20		25			30		
Ile	Cys	Asp	Ser	Arg	Val	Leu	Glu	Arg	Tyr	Leu	Leu	Glu	Ala	Lys	Glu
							35		40			45			
Ala	Glu	Asn	Ile	Thr	Thr	Gly	Cys	Ala	Glu	His	Cys	Ser	Leu	Asn	Glu
							50		55			60			
Asn	Ile	Thr	Val	Pro	Asp	Thr	Lys	Val	Asn	Phe	Tyr	Ala	Trp	Lys	Arg
							65		70		75			80	
Met	Glu	Val	Gly	Gln	Gln	Ala	Val	Glu	Val	Trp	Gln	Gly	Leu	Ala	Leu
							85		90			95			
Leu	Ser	Glu	Ala	Val	Leu	Arg	Gly	Gln	Ala	Leu	Leu	Val	Asn	Ser	Ser
							100		105			110			
Gln	Pro	Trp	Glu	Pro	Leu	Gln	Leu	His	Val	Asp	Lys	Ala	Val	Ser	Gly
							115		120			125			
Leu	Arg	Ser	Leu	Thr	Thr	Leu	Leu	Arg	Ala	Leu	Gly	Ala	Gln	Lys	Glu
							130		135			140			
Ala	Ile	Ser	Pro	Pro	Asp	Ala	Ala	Ser	Ala	Ala	Pro	Leu	Arg	Ala	Ile
							145		150			155			160
Thr	Ala	Asp	Thr	Phe	Arg	Lys	Leu	Phe	Arg	Val	Tyr	Ser	Asn	Phe	Leu
							165		170			175			
Arg	Gly	Lys	Leu	Lys	Leu	Tyr	Thr	Gly	Glu	Ala	Cys	Arg	Thr	Gly	Asp
							180		185			190			
Arg															

<210> 83
<211> 166
<212> PRT

<213> Artificial Sequence

<220>

<223> mutein

<400> 83

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
 1 5 10 15
 Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
 20 25 30
 Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
 35 40 45
 Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
 50 55 60
 Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
 65 70 75 80
 Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
 85 90 95
 Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
 100 105 110
 Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
 115 120 125
 Pro Leu Arg Thr Ala Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
 130 135 140
 Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
 145 150 155 160
 Cys Arg Thr Gly Asp Arg
 165

<210> 84

<211> 166

<212> PRT

<213> Artificial Sequence

<220>

<223> mutein

<400> 84

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
 1 5 10 15
 Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
 20 25 30
 Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
 35 40 45
 Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
 50 55 60
 Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
 65 70 75 80
 Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
 85 90 95
 Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
 100 105 110
 Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
 115 120 125
 Pro Leu Arg Thr Ile Ala Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
 130 135 140
 Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
 145 150 155 160
 Cys Arg Thr Gly Asp Arg
 165

<210> 85

<211> 166

<212> PRT

<213> Artificial Sequence

<220>

<223> mutein

<400> 85

Ala	Pro	Pro	Arg	Leu	Ile	Cys	Asp	Ser	Arg	Val	Leu	Glu	Arg	Tyr	Leu
1				5				10				15			
Leu	Glu	Ala	Lys	Glu	Ala	Glu	Asn	Ile	Thr	Thr	Gly	Cys	Ala	Glu	His
	20				25						30				
Cys	Ser	Leu	Asn	Glu	Asn	Ile	Thr	Val	Pro	Asp	Thr	Lys	Val	Asn	Phe
	35				40						45				
Tyr	Ala	Trp	Lys	Arg	Met	Glu	Val	Gly	Gln	Gln	Ala	Val	Glu	Val	Trp
	50				55				60						
Gln	Gly	Leu	Ala	Leu	Leu	Ser	Glu	Ala	Val	Leu	Arg	Gly	Gln	Ala	Leu
	65				70				75			80			
Leu	Val	Asn	Ser	Ser	Gln	Pro	Trp	Glu	Pro	Leu	Gln	Leu	His	Val	Asp
		85				90					95				
Lys	Ala	Val	Ser	Gly	Leu	Arg	Ser	Leu	Thr	Leu	Leu	Arg	Ala	Leu	
	100				105					110					
Gly	Ala	Gln	Lys	Glu	Ala	Ile	Ser	Pro	Pro	Asp	Ala	Ala	Ser	Ala	Ala
	115				120					125					
Pro	Leu	Arg	Thr	Ile	Thr	Ala	Asp	Thr	Phe	Arg	Ala	Leu	Phe	Arg	Val
	130				135				140						
Tyr	Ser	Asn	Phe	Leu	Arg	Gly	Lys	Leu	Lys	Leu	Tyr	Thr	Gly	Glu	Ala
	145				150				155			160			
Cys	Arg	Thr	Gly	Asp	Arg										
	165														

<210> 86

<211> 166

<212> PRT

<213> Artificial Sequence

<220>

<223> mutein

<400> 86

Ala	Pro	Pro	Arg	Leu	Ile	Cys	Asp	Ser	Arg	Val	Leu	Glu	Arg	Tyr	Leu
1				5				10				15			
Leu	Glu	Ala	Lys	Glu	Ala	Glu	Asn	Ile	Thr	Thr	Gly	Cys	Ala	Glu	His
	20				25				30						
Cys	Ser	Leu	Asn	Glu	Asn	Ile	Thr	Val	Pro	Asp	Thr	Lys	Val	Asn	Phe
	35				40					45					
Tyr	Ala	Trp	Lys	Arg	Met	Glu	Val	Gly	Gln	Gln	Ala	Val	Glu	Val	Trp
	50				55				60						
Gln	Gly	Leu	Ala	Leu	Leu	Ser	Glu	Ala	Val	Leu	Arg	Gly	Gln	Ala	Leu
	65				70				75			80			
Leu	Val	Asn	Ser	Ser	Gln	Pro	Trp	Glu	Pro	Leu	Gln	Leu	His	Val	Asp
		85				90					95				
Lys	Ala	Val	Ser	Gly	Leu	Arg	Ser	Leu	Thr	Leu	Leu	Arg	Ala	Leu	
	100				105					110					
Gly	Ala	Gln	Lys	Glu	Ala	Ile	Ser	Pro	Pro	Asp	Ala	Ala	Ser	Ala	Ala
	115				120					125					
Pro	Leu	Arg	Thr	Ile	Thr	Ala	Asp	Thr	Phe	Arg	Lys	Leu	Ile	Arg	Val
	130				135				140						
Tyr	Ser	Asn	Phe	Leu	Arg	Gly	Lys	Leu	Lys	Leu	Tyr	Thr	Gly	Glu	Ala
	145				150				155			160			
Cys	Arg	Thr	Gly	Asp	Arg										

<210> 87
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 87
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Ala Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 88
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 88
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140

10165-022-999 (substitute - 6-16-08) .txt
Tyr Ala Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 89
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 89
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Lys Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 90
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 90
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala

10165-022-999 (substitute - 6-16-08) .txt

	115	120	125
Pro	Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys	Leu Phe Arg Val	
	130	135	140
Tyr	Ser Ala Phe Leu Arg Gly Lys Leu Lys	Tyr Thr Gly Glu Ala	
	145	150	155
Cys	Arg Thr Gly Asp Arg		160
	165		

<210> 91
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 91

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu				
	1	5	10	15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His				
	20	25	30	
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe				
	35	40	45	
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp				
	50	55	60	
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu				
	65	70	75	80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp				
	85	90	95	
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu				
	100	105	110	
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala				
	115	120	125	
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val				
	130	135	140	
Tyr Ser Asn Tyr Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala				
	145	150	155	160
Cys Arg Thr Gly Asp Arg				
	165			

<210> 92
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 92

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu				
	1	5	10	15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His				
	20	25	30	
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe				
	35	40	45	
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp				
	50	55	60	
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu				
	65	70	75	80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp				
	85	90	95	

10165-022-999 (substitute - 6-16-08) .txt
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Ala Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 93
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 93
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Ala Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 94
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 94
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu

10165-022-999 (substitute - 6-16-08) .txt

65	Leu	Val	Asn	Ser	Ser	Gln	Pro	Trp	Glu	Pro	Leu	Gln	Leu	His	Val	Asp
						70			75							80
						85			90							95
	Lys	Ala	Val	Ser	Gly	Leu	Arg	Ser	Leu	Thr	Thr	Leu	Leu	Arg	Ala	Leu
						100			105							110
	Gly	Ala	Gln	Lys	Glu	Ala	Ile	Ser	Pro	Pro	Asp	Ala	Ala	Ser	Ala	Ala
						115			120							125
	Pro	Leu	Arg	Thr	Ile	Thr	Ala	Asp	Thr	Phe	Arg	Lys	Leu	Phe	Arg	Val
						130			135							140
	Tyr	Ser	Asn	Phe	Leu	Ala	Gly	Lys	Leu	Lys	Leu	Tyr	Thr	Gly	Glu	Ala
						145			150							160
	Cys	Arg	Thr	Gly	Asp	Arg										
						165										

<210> 95
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 95
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Glu Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 96
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 96
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45

10165-022-999 (substitute - 6-16-08) .txt
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Ala Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 97
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 97
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Ala Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 98
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 98
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His

10165-022-999 (substitute - 6-16-08) .txt
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Trp Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 99
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 99
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Ala Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 100
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 100

10165-022-999 (substitute - 6-16-08) .txt
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Ala Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 101
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 101
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Ala Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 102
<211> 166
<212> PRT
<213> Artificial Sequence

<220>

<223> mutein

<400> 102

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
 1 5 10 15
 Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
 20 25 30
 Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
 35 40 45
 Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
 50 55 60
 Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
 65 70 75 80
 Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
 85 90 95
 Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
 100 105 110
 Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
 115 120 125
 Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
 130 135 140
 Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Ala Glu Ala
 145 150 155 160
 Cys Arg Thr Gly Asp Arg
 165

<210> 103

<211> 166

<212> PRT

<213> Artificial Sequence

<220>

<223> mutein

<400> 103

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
 1 5 10 15
 Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
 20 25 30
 Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
 35 40 45
 Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
 50 55 60
 Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
 65 70 75 80
 Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
 85 90 95
 Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
 100 105 110
 Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
 115 120 125
 Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
 130 135 140
 Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
 145 150 155 160
 Ser Arg Thr Gly Asp Arg
 165

<210> 104

<211> 166

<212> PRT

<213> Artificial Sequence

<220>

<223> mutein

<400> 104

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
 1 5 10 15
 Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
 20 25 30
 Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
 35 40 45
 Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
 50 55 60
 Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
 65 70 75 80
 Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
 85 90 95
 Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
 100 105 110
 Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
 115 120 125
 Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
 130 135 140
 Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
 145 150 155 160
 Ala Arg Thr Gly Asp Arg
 165

<210> 105

<211> 166

<212> PRT

<213> Artificial Sequence

<220>

<223> mutein

<400> 105

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
 1 5 10 15
 Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
 20 25 30
 Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
 35 40 45
 Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
 50 55 60
 Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
 65 70 75 80
 Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
 85 90 95
 Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
 100 105 110
 Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
 115 120 125
 Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
 130 135 140
 Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
 145 150 155 160
 Cys Ala Thr Gly Asp Arg
 165

10165-022-999 (substitute - 6-16-08) .txt

<210> 106
<211> 165
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 106
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Glu His Cys
20 25 30
Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Asp Val Asn Phe Tyr
35 40 45
Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln
50 55 60
Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu
65 70 75 80
Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys
85 90 95
Ala Val Glu Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly
100 105 110
Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro
115 120 125
Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr
130 135 140
Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys
145 150 155 160
Arg Thr Gly Asp Arg
165

<210> 107
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 107
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Asn Glu Thr
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg

<210> 108
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 108
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Asp Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Glu Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 109
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 109
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Glu Ser Leu Thr Thr Ser Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140

10165-022-999 (substitute - 6-16-08) .txt
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 110
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 110
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Ala Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Ala Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 111
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 111
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Ala Val Asn Phe
35 40 45
Tyr Ala Trp Ala Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala

10165-022-999 (substitute - 6-16-08) .txt
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Ala Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 112
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 112
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 113
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 113
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95

10165-022-999 (substitute - 6-16-08) .txt
Ala Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Ala Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 114
<211> 193
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 114
Met Gly Val His Glu Cys Pro Ala Trp Leu Trp Leu Leu Ser Leu
1 5 10 15
Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu
20 25 30
Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu
35 40 45
Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu
50 55 60
Asn Ile Thr Val Pro Asp Thr Ala Val Asn Phe Tyr Ala Trp Lys Arg
65 70 75 80
Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu
85 90 95
Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser
100 105 110
Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Ala Ala Val Ser Gly
115 120 125
Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu
130 135 140
Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile
145 150 155 160
Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu
165 170 175
Arg Gly Ala Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp
180 185 190
Arg

<210> 115
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 115
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Ala Val Asn Phe
Page 60

10165-022-999 (substitute - 6-16-08) .txt

35	40	45
Tyr Ala Trp Ala Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp		
50	55	60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu		
65	70	75
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp		
85	90	95
Ala Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu		
100	105	110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala		
115	120	125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Ala Leu Phe Arg Val		
130	135	140
Tyr Ser Asn Phe Leu Arg Gly Ala Leu Lys Leu Tyr Thr Gly Glu Ala		
145	150	155
Cys Arg Thr Gly Asp Arg		
165		

<210> 116
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 116

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu		
1	5	10
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His		
20	25	30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Ala Val Asn Phe		
35	40	45
Tyr Ala Trp Ala Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp		
50	55	60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu		
65	70	75
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp		
85	90	95
Ala Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu		
100	105	110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala		
115	120	125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Ala Leu Phe Arg Val		
130	135	140
Tyr Ser Asn Phe Leu Arg Gly Ala Leu Ala Leu Tyr Thr Gly Glu Ala		
145	150	155
Cys Arg Thr Gly Asp Arg		
165		

<210> 117
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 117

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu		
1	5	10

10165-022-999 (substitute - 6-16-08) .txt

Leu Glu Ala Lys Glu Ala Glu Lys Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Lys Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Lys Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 118
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

<400> 118
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Ala Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Lys Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 119
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> mutein

10165-022-999 (substitute - 6-16-08) .txt

<400> 119
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Ala Ala Leu
1 5 10 15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160
Cys Arg Thr Gly Asp Arg
165

<210> 120

<211> 36

<212> DNA

<213> Artificial

<220>

<223> Description of Artificial Sequence: primer

<400> 120

gtctactcca atttcctcga gggaaagctg aagctg

36

<210> 121

<211> 34

<212> DNA

<213> Artificial

<220>

<223> Description of Artificial Sequence: primer

<400> 121

gcttcagctt tccctcgagg aaattggagt agac

34

<210> 122

<211> 32

<212> DNA

<213> Artificial

<220>

<223> Description of Artificial Sequence: primer

<400> 122

ccgtcagtgcc ttgatggc ctcaccactc tg

32

<210> 123

<211> 32

10165-022-999 (substitute - 6-16-08) .txt

<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 123
cagagtggtg aggctctcaa ggccactgac gg 32

<210> 124
<211> 32
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 124
ccgtcagtgg cttttagatc ctcaccactc tg 32

<210> 125
<211> 32
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 125
cagagtggtg aggctctcaa ggccactgac gg 32

<210> 126
<211> 31
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 126
cgcaggccta ccacttcgt tcgggctctg g 31

<210> 127
<211> 31
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 127
ccagagcccg aagcgaagtg gtgaggctgc g 31

<210> 128
<211> 40
<212> DNA
<213> Artificial

10165-022-999 (substitute - 6-16-08) .txt

<220>
<223> Description of Artificial Sequence: primer

<400> 128
gaatatcact gtcccgacg gtggtgctg gaagaggatg 40

<210> 129
<211> 40
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 129
catccctttc caggcaccac cgtctggac agtgatattc 40

<210> 130
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 130
tacctcttgg aggccgcgga ggccgagaat atc 33

<210> 131
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 131
gatattctcg gcctccgcgg cctccaagag gta 33

<210> 132
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 132
gctgacactt tccgcgcact cttccgagtc tactc 35

<210> 133
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

10165-022-999 (substitute - 6-16-08) .txt

<400> 133	gagtagactc ggaagagtgc gcggaaagtg tcagc	35
<210> 134		
<211> 33		
<212> DNA		
<213> Artificial		
<220>		
<223> Description of Artificial Sequence: primer		
<400> 134	atttcctccg gggagcgctg aagctgtaca cag	33
<210> 135		
<211> 33		
<212> DNA		
<213> Artificial		
<220>		
<223> Description of Artificial Sequence: primer		
<400> 135	ctgtgtacag cttcagcgct ccccgaggaa aat	33
<210> 136		
<211> 32		
<212> DNA		
<213> Artificial		
<220>		
<223> Description of Artificial Sequence: primer		
<400> 136	ctccggggaa agctggcgct gtacacaggg ga	32
<210> 137		
<211> 32		
<212> DNA		
<213> Artificial		
<220>		
<223> Description of Artificial Sequence: primer		
<400> 137	tccccctgtgt acagcgccag ctttccccgg ag	32
<210> 138		
<211> 35		
<212> DNA		
<213> Artificial		
<220>		
<223> Description of Artificial Sequence: primer		
<400> 138	actgtcccaag acaccgcagt taatttctat gcctg	35

10165-022-999 (substitute - 6-16-08) .txt

<210> 139
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 139
caggcataga aattaactgc ggtgtctggg acagt

35

<210> 140
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 140
agttaatttc tatgcctggg cgaggatgga ggtcg

35

<210> 141
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 141
cgacctccat cctcgcccag gcatagaaat taact

35

<210> 142
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 142
tgcagctgca tgtggatgca gccgtcagtg gcc

33

<210> 143
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 143
ggccactgac ggctgcaccc acatgcagct gca

33

<210> 144
<211> 32

10165-022-999 (substitute - 6-16-08) .txt

<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 144
ctctgggagc ccaggcgaa gccatctccc ct 32

<210> 145
<211> 32
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 145
aggggagatg gcttccgcct gggctcccag ag 32

<210> 146
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 146
gctgacactt tccgcgcact cttccgagtc tactc 35

<210> 147
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 147
gagtagactc ggaagagtgc gcggaaaatgc tcagc 35

<210> 148
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 148
agttaatttc tatgcctggg cgaggatgga ggtcg 35

<210> 149
<211> 35
<212> DNA
<213> Artificial

10165-022-999 (substitute - 6-16-08) .txt

<220>
<223> Description of Artificial Sequence: primer

<400> 149
cgacctccat cctcgccag gcatagaaat taact 35

<210> 150
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 150
gctgacacatt tccgcgcact cttccgagtc tactc 35

<210> 151
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 151
gagtagactc ggaagagtgc gcggaaagtg tcagc 35

<210> 152
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 152
agttaatttc tatgcctggg cgaggatgga ggtcg 35

<210> 153
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 153
cgacctccat cctcgccag gcatagaaat taact 35

<210> 154
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

10165-022-999 (substitute - 6-16-08) .txt

<400> 154	actgtcccgag acaccgcagt taatttctat gcctg	35
<210> 155		
<211> 35		
<212> DNA		
<213> Artificial		
<220>		
<223> Description of Artificial Sequence: primer		
<400> 155	caggcataga aattaactgc ggtgtctggg acagt	35
<210> 156		
<211> 33		
<212> DNA		
<213> Artificial		
<220>		
<223> Description of Artificial Sequence: primer		
<400> 156	tgcagctgca tgtggatgca gccgtcagtg gcc	33
<210> 157		
<211> 33		
<212> DNA		
<213> Artificial		
<220>		
<223> Description of Artificial Sequence: primer		
<400> 157	ggccactgac ggctgcattcc acatgcagct gca	33
<210> 158		
<211> 33		
<212> DNA		
<213> Artificial		
<220>		
<223> Description of Artificial Sequence: primer		
<400> 158	atttcctccg gggagcgctg aagctgtaca cag	33
<210> 159		
<211> 33		
<212> DNA		
<213> Artificial		
<220>		
<223> Description of Artificial Sequence: primer		
<400> 159	ctgtgtacag cttcagcgct ccccgagga aat	33

10165-022-999 (substitute - 6-16-08) .txt

<210> 160
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 160
tgcagctgca tgtggatgca gccgtcagtg gcc 33

<210> 161
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 161
ggccactgac ggctgcattcc acatgcagct gca 33

<210> 162
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 162
atttcctccg gggagcgctg aagctgtaca cag 33

<210> 163
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 163
ctgtgtacag cttcagcgct cccccggagga aat 33

<210> 164
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 164
actgtcccag acaccgcagt taatttctat gcctg 35

<210> 165
<211> 35

10165-022-999 (substitute - 6-16-08) .txt

<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 165
caggcataga aattaactgc ggtgtctggg acagt 35

<210> 166
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 166
tgccagctgca tgtggatgca gccgtcagtg gcc 33

<210> 167
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 167
ggccactgac ggctgcatcc acatgcagct gca 33

<210> 168
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 168
atttcctccg gggagcgctg aagctgtaca cag 33

<210> 169
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 169
ctgtgtacag cttcagcgct ccccgagga aat 33

<210> 170
<211> 35
<212> DNA
<213> Artificial

10165-022-999 (substitute - 6-16-08) .txt

<220> Description of Artificial Sequence: primer

<400> 170
actgtccca ag acaccgcagt taatttctat gcctg 35

<210> 171
<211> 35
<212> DNA
<213> Artificial

<220> Description of Artificial Sequence: primer

<400> 171
caggcataga aattaactgc ggtgtctggg acagt 35

<210> 172
<211> 35
<212> DNA
<213> Artificial

<220> Description of Artificial Sequence: primer

<400> 172
agttaatttc tatgcctggg cgaggatgga ggtcg 35

<210> 173
<211> 35
<212> DNA
<213> Artificial

<220> Description of Artificial Sequence: primer

<400> 173
cgacctccat cctcgccccag gcatagaaat taact 35

<210> 174
<211> 33
<212> DNA
<213> Artificial

<220> Description of Artificial Sequence: primer

<400> 174
tgtcagctgca tgtggatgca gccgtcagtg gcc 33

<210> 175
<211> 33
<212> DNA
<213> Artificial

<220> Description of Artificial Sequence: primer

10165-022-999 (substitute - 6-16-08) .txt

<400> 175 ggccactgac ggctgcattcc acatgcagct gca	33
<210> 176 <211> 33 <212> DNA <213> Artificial	
<220> <223> Description of Artificial Sequence: primer	
<400> 176 atttcctccg gggagcgctg aagctgtaca cag	33
<210> 177 <211> 33 <212> DNA <213> Artificial	
<220> <223> Description of Artificial Sequence: primer	
<400> 177 ctgtgtacag cttcagcgct ccccgagga aat	33
<210> 178 <211> 35 <212> DNA <213> Artificial	
<220> <223> Description of Artificial Sequence: primer	
<400> 178 actgtcccag acaccgcagt taatttctat gcctg	35
<210> 179 <211> 35 <212> DNA <213> Artificial	
<220> <223> Description of Artificial Sequence: primer	
<400> 179 caggcataga aattaactgc ggtgtctggg acagt	35
<210> 180 <211> 35 <212> DNA <213> Artificial	
<220> <223> Description of Artificial Sequence: primer	
<400> 180 agttaatttc tatgcctggg cgaggatgga ggtcg	35

10165-022-999 (substitute - 6-16-08) .txt

<210> 181
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 181
cgacctccat cctcgccca gcatagaaat taact

35

<210> 182
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 182
gctgacactt tccgcgcact cttccgagtc tactc

35

<210> 183
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 183
gagtagactc ggaagagtgc gcggaaagtg tcagc

35

<210> 184
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 184
tgcaagctgca tgtggatgca gccgtcagtg gcc

33

<210> 185
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 185
ggccactgac ggctgcattcc acatgcagct gca

33

<210> 186
<211> 33

10165-022-999 (substitute - 6-16-08) .txt

<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 186
atttcctccg gggagcgctg aagctgtaca cag 33

<210> 187
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 187
ctgtgtacag cttcagcgct ccccgaggaa aat 33

<210> 188
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 188
actgtccccag acaccgcagt taatttctat gcctg 35

<210> 189
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 189
caggcataga aattaactgc ggtgtctggg acagt 35

<210> 190
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 190
agttaatttc tatgcctggg cgaggatgga ggtcg 35

<210> 191
<211> 35
<212> DNA
<213> Artificial

10165-022-999 (substitute - 6-16-08) .txt

<220>
<223> Description of Artificial Sequence: primer

<400> 191
cgacctccat cctcgccag gcatagaaat taact 35

<210> 192
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 192
gctgacactt tccgcgact cttccgagtc tactc 35

<210> 193
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 193
gagtagactc ggaagagtgc gcggaaagtg tcagc 35

<210> 194
<211> 32
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 194
ctccggggag cgctggcgct gtacacaggg ga 32

<210> 195
<211> 32
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 195
tccccctgtgt acagcgccag cgctccccgg ag 32

<210> 196
<211> 31
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

10165-022-999 (substitute - 6-16-08) .txt

<400> 196 caaggaggcc gagaaaatca cgacgggctg t	31
<210> 197 <211> 31 <212> DNA <213> Artificial	
<220> <223> Description of Artificial Sequence: primer	
<400> 197 acagcccgtc gtgattttct cggcctcctt g	31
<210> 198 <211> 37 <212> DNA <213> Artificial	
<220> <223> Description of Artificial Sequence: primer	
<400> 198 actgcagctt gaatgagaaaa atcactgtcc cagacac	37
<210> 199 <211> 37 <212> DNA <213> Artificial	
<220> <223> Description of Artificial Sequence: primer	
<400> 199 gtgtctggga cagtgatttt ctcattcaag ctgcagt	37
<210> 200 <211> 31 <212> DNA <213> Artificial	
<220> <223> Description of Artificial Sequence: primer	
<400> 200 aggccctgtt ggtcaaatct tcccagccgt g	31
<210> 201 <211> 31 <212> DNA <213> Artificial	
<220> <223> Description of Artificial Sequence: primer	
<400> 201 cacggctggg aagatttgac caacagggcc t	31

10165-022-999 (substitute - 6-16-08) .txt

<210> 202
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 202
atccctccg gggatggctg aagctgtaca cag 33

<210> 203
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 203
ctgtgtacag cttcagccat ccccgagga aat 33

<210> 204
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 204
agccgagtcc tggaggcgcc cctcttggag gccaa 35

<210> 205
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 205
ttggcctcca agagggccgc ctccaggact cggtt 35

<210> 206
<211> 35
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: primer

<400> 206
agccgagtcc tggagagggc cctcttggag gccaa 35

<210> 207
<211> 35

10165-022-999 (substitute - 6-16-08) .txt

<212> DNA
 <213> Artificial

<220>
 <223> Description of Artificial Sequence: primer

<400> 207
 ttggcctcca agagggccct ctccaggact cggtct

35

<210> 208
 <211> 6059
 <212> DNA
 <213> Artificial

<220>
 <223> Description of Artificial Sequence: plasmid

<400> 208
 ctagagtcga cccgggcggc cgcttccctt tagtgagggt taatgcttcg agcagacatg 60
 ataagataca ttgatgagtt tggacaaacc acaactagaa tgcaatgtaaa aaaatgcttt 120
 atttgtgaaa tttgtatgc tattgctta tttgttaacca ttataagctg caataaacaa 180
 gttaacaaca acaattgcat tcattttatg tttcagggttc agggggagat gtgggagggtt 240
 ttttaagca agtaaaacct ctacaaatgt ggtaaaatcc gataaggatc gatccgggct 300
 ggcgtaatag cgaagaggcc cgacccgatc gcccctccca acagttgcgc agcctgaatg 360
 gcgaatggac gcgccctgta gcggcgcatt aagcgcggcg ggtgtgggtt ttacgcgcag 420
 cgtgaccgct acacttgcca gccccttagc gcccgtcct ttcgtttct tcccttcctt 480
 tctcgccacg ttcgcccggct ttccccgtca agctctaaat cgggggctcc ctttagggtt 540
 ccgatttagt gctttacggc acctcgaccc caaaaaactt gattagggtg atggttcacg 600
 tagtgggcca tcgcccgtat agacggtttt tcgccccttg acgttggagt ccacgttctt 660
 taatagtgga ctcttgcgttcc aaactggaac aacactcaac cctatctcggt tctattcttt 720
 tgatttataa gggattttgc cgatttcggc ctattggta aaaaatgagc tgatttaaca 780
 aaaatttaac gcgaattttt acaaaatatt aacgcttaca atttcctgtat gcggatatttt 840
 ctccttacgc atctgtgcgg tatttcacac cgacacgcg gatctgcgcgc gcaccatggc 900
 ctgaaataac ctctgaaaga ggaacttggt taggtacctt ctgaggcggaa aagaaccagc 960
 tgtggaatgt gtgtcagttt ggggtggaa agtccccagg ctccccagca ggcagaagta 1020
 tgcaaagcat gcatctcaat tagtcagcaa ccaggtgtgg aaagtccccca ggctccccag 1080
 cagggcagaag tatgcaaagc atgcatctca attagtcgcg aaccatagtc ccgccccctaa 1140
 ctccggccat cccggcccta actccggccca gttccggccca ttctccggcc catggctgac 1200
 taattttttt tatttatgca gaggccgagg ccgcctcggc ctctgagctt ttccagaagt 1260
 agtgaggagg cttttttggaa ggcctaggct tttgcaaaaa gcttgattct tctgacacaa 1320

10165-022-999 (substitute - 6-16-08) .txt

cagtctcgaa	cttaaggcta	gagccaccat	gattgaacaa	gatggattgc	acgcaggttc	1380
tccggccgct	tgggtggaga	ggctattcgg	ctatgactgg	gcacaacaga	caatcggtcg	1440
ctctgatgcc	gccgtgttcc	ggctgtcagc	gcaggggcgc	ccggttcttt	ttgtcaagac	1500
cgacctgtcc	ggtgccctga	atgaactgca	ggacgaggca	gcgcggctat	cgtggctggc	1560
cacgacgggc	gttccttgcg	cagctgtgct	cgacgttgct	actgaagcgg	gaagggactg	1620
gctgctattg	ggcgaagtgc	cggggcagga	tctcctgtca	tctcaccttgc	ctcctgcccga	1680
gaaagtatcc	atcatggctg	atgcaatgcg	gcggctgcat	acgcttgate	cggctacactg	1740
cccattcgac	caccaagcga	aacatcgcat	cgagcgagca	cgtactcgg	tggaagccgg	1800
tcttgcgtat	caggatgatc	tggacgaaga	gcatcagggg	ctcgcgcccag	ccgaactgtt	1860
cgccaggctc	aaggcgcgca	tgcccacgg	cgaggatctc	gtcgtgaccc	atggcgatgc	1920
ctgcttgcgg	aatatcatgg	tggaaaatgg	ccgctttct	ggattcatcg	actgtggccg	1980
gctgggtgtg	gccccccct	atcaggacat	agcgttgct	acccgtata	ttgctgaaga	2040
gcttggccgc	aatgggcgt	accgcttcct	cgtctttac	ggtatcgccg	ctcccgattc	2100
gcagcgcattc	gccttctatc	gccttcttga	cgagttcttc	tgagcgggac	tctgggttgc	2160
gaaatgaccg	accaagcgac	gcccaacctg	ccatcacgat	ggccgcaata	aaatatctt	2220
attttcatta	catctgtgtg	ttggttttt	gtgtgaatcg	atagcgataa	ggatccgcgt	2280
atgggtgcact	ctcagtacaa	tctgctctga	tgccgcata	ttaagccagc	cccgacaccc	2340
gccaacaccc	gctgacgcgc	cctgacgggc	ttgtctgctc	ccggcatccg	cttacagaca	2400
agctgtgacc	gtctccggga	gctgcatgt	tcagaggttt	tcaccgtcat	caccgaaacg	2460
cgcgagacga	aaggccctcg	tgatacgcct	attttatag	gttaatgtca	tgataataat	2520
ggtttcttag	acgtcaggtg	gcactttcg	ggaaatgtg	cgcggAACCC	ctattgttt	2580
atttttctaa	atacattcaa	atatgtatcc	gctcatgaga	caataaccct	gataaatgct	2640
tcaataatat	tgaaaaagga	agagttatgag	tattcaacat	ttccgtgtcg	cccttattcc	2700
ctttttgcg	gcattttgcc	ttcctgtttt	tgctcaccca	gaaacgctgg	tgaaagtaaa	2760
agatgctgaa	gatcagttgg	gtgcacgagt	gggttacatc	gaactggatc	tcaacagcgg	2820
taagatcctt	gagagtttc	gccccgaaga	acgtttcca	atgatgagca	cttttaaagt	2880
tctgctatgt	ggcgcggat	tatccgtat	tgacgcccgg	caagagcaac	tcggtcgccc	2940
catacactat	tctcagaatg	acttgggtga	gtactcacca	gtcacagaaaa	agcatcttac	3000
ggatggcatg	acagtaagag	aattatgcag	tgctgccata	accatgagtg	ataacactgc	3060
ggccaaactta	cttctgacaa	cgatcgagg	accgaaggag	ctaaccgctt	ttttgcacaa	3120
catggggat	catgtaactc	gccttgcata	ttgggaaccg	gagctgaatg	aagccataacc	3180
aaacgacgag	cgtgacacca	cgatgcctgt	agcaatggca	acaacgttgc	gcaaactatt	3240

10165-022-999 (substitute - 6-16-08) .txt

aactggcgaa ctacttactc tagcttcccg gcaacaatta atagactgga tggaggcgga	3300
taaagttgca ggaccacttc tgcgctcgcc ccttccggct ggctggttta ttgctgataa	3360
atctggagcc ggtgagcgtg ggtctcgcc tatcattgca gcactggggc cagatggtaa	3420
gccctccgt atcgttagtta tctacacgac ggggagtcag gcaactatgg atgaacgaaa	3480
tagacagatc gctgagatag gtgcctcact gattaagcat tgtaactgt cagaccaagt	3540
ttactcatat atactttaga ttgatttaaa acttcatttt taatttaaaa ggtcttagt	3600
gaagatcctt tttgataatc tcatgaccaa aatcccttaa cgtgagttt cgccactg	3660
agcgtcagac cccgtagaaa agatcaaagg atcttcttga gatcctttt ttctgcgcgt	3720
aatctgctgc ttgcaaacaa aaaaaccacc gctaccagcg gtggttgtt tgccggatca	3780
agagctacca actcttttc cgaaggtaac tggcttcagc agagcgcaga taccaaatac	3840
tgttcttcta gttagccgt agttaggcca ccacttcaag aactctgttag caccgcctac	3900
atacctcgct ctgctaattcc tgtaaccgt ggctgctgcc agtggcgata agtcgtgtct	3960
taccgggttg gactcaagac gatagttacc ggataaggcg cagcggtcgg gctgaacggg	4020
gggttcgtgc acacagccca gcttggagcg aacgacccac accgaactga gataacctaca	4080
gcgtgagcta tgagaaagcg ccacgcttcc cgaagggaga aaggcggaca ggtatccggt	4140
aagcggcagg gtcggAACAG gagagcgcac gagggagctt ccagggggaa acgcctggta	4200
tctttatagt cctgtcggtt ttcgccacct ctgacttgag cgtcgatttt tgtgatgctc	4260
gtcagggggg cgagcctat gaaaaaacgc cagcaacgca gccttttac ggccctggc	4320
cctttgctgg cctttgctc acatggctcg acagatcttca aatattggcc attagccata	4380
ttattcattt gttatatacg ataaatcaat attggctatt ggccatttca tacgttgtat	4440
ctatatcata atatgtacat ttatattggc tcatgtccaa tatgaccgcc atgttggcat	4500
tgattattga ctagttatta atagtaatca attacgggtt cattagttca tagcccatat	4560
atggagttcc gcgttacata acttacggta aatggcccgc ctggctgacc gcccaacgac	4620
ccccgccccat tgacgtcaat aatgacgtat gttcccatag taacgccaat agggactttc	4680
cattgacgtc aatgggtgga gtatttacgg taaactgccc acttggcagt acatcaagtg	4740
tatcatatgc caagtccgcc ccctatttgc gtcaatgacg gtaaatggcc cgccctggcat	4800
tatgcccagt acatgacccctt acgggacttt cctacttggc agtacatcta cgtattagtc	4860
atcgcttta ccatgggtat gcgggtttgg cagtagacca atgggcgtgg atagcggttt	4920
gactcacggg gatttccaag tctccacccc attgacgtca atgggagttt gttttggcac	4980
caaaatcaac gggactttcc aaaatgtcgt aacaactgca atcgcccgcc ccgttgcac	5040
aaatggcgg taggcgtgta cgggtggagg tctatataag cagagctcgt ttagtgaacc	5100

10165-022-999 (substitute - 6-16-08) .txt

gtcagatcac tagaagcttt attgcggtag tttatcacag ttcaaattgct aacgcagtca	5160
gtgcttctga cacaacagtc tcgaacttaa gctgcagtga ctctcttaag gtgccttgc	5220
agaagtttgtt cgtagggcac tggcaggtt agtatcaagg ttacaagaca ggttaagga	5280
gaccaataga aactgggctt gtcgagacag agaagactct tgcgttctg ataggcacct	5340
attggtctta ctgacatcca cttgccttt ctctccacag gtgtccactc ccagttcaat	5400
tacagctctt aaggcttagag tacttaatac gactcactat aggctgcctt cgagcgcgga	5460
gatgggggtt cacgaatgtc ctgcctggct gtggcttctc ctgtccctgc tgtcgctccc	5520
tctggccctc ccagtccctgg gcgcaccacc acgcctcatc tgtgacagcc gagtccttgg	5580
gaggtacctc ttggaggcca aggaggccga gaatatcacg acgggctgtg ctgaacactg	5640
cagcttgaat gagaatatca ctgtccctaga caccaaaatgtt aatttctatg cctggaagag	5700
gatggagggtc gggcagcagg ccgtagaagt ctggcagggc ctggccctgc tgtcgaaagc	5760
tgtcctgcgg ggccaggccc tggtggtcaa ctctccctag ccgtgggagc ccctgcagct	5820
gcatgtggat aaagccgtca gtggccttcg cagcctcacc actctgcttc gggctctgcg	5880
agcccagaag gaagccatct cccctccaga tgcggcctca gctgctccac tccgaacaat	5940
cactgctgac actttccgca aactcttccg agtctactcc aatttctcc gggaaagct	6000
gaagctgtac acaggggagg cctgcaggac aggggaccat catcaccatc accattgat	6059

<210> 209

<211> 6059

<212> DNA

<213> Artificial

<220>

<223> Description of Artificial Sequence: plasmid

<400> 209

ctagagtcga cccgggcggc cgcttccctt tagtgagggt taatgcttcg agcagacatg	60
ataagataca ttgatgagtt tggacaaacc acaactagaa tgcagtgaaa aaaatgcttt	120
atttgcgtaaa tttgtatgc tattgctttt tttgttaacca ttataagctg caataaaca	180
gttaacaaca acaattgcat tcattttatg tttcagggttc agggggagat gtgggagggtt	240
ttttaaagca agtaaaacct ctacaaatgt ggtaaaatcc gataaggatc gatccgggct	300
ggcgtaatag cgaagaggcc cgacccgatc gccctccca acagttgcgc agcctgaatg	360
gcgaatggac gcgccctgta gcggcgcatt aagcgcggcg ggtgtgggtt ttacgcgcag	420
cgtgaccgct acacttgcca gcgccctagc gcccgcctt ttcgcttct tcccttcctt	480
tctcgccacg ttgcggcgtt ttccccgtca agctctaaat cgggggctcc ctttagggtt	540
ccgatttagt gctttacggc acctcgaccc caaaaaactt gattagggtt atggttcagc	600
tagtgggcca tcgcccgtat agacggtttt tcgccccttg acgttggagt ccacgttctt	660

10165-022-999 (substitute - 6-16-08) .txt

taatagtgga	ctcttgttcc	aaactggaac	aacactcaac	cctatctcg	tctattcttt	720
tgatttataa	gggattttgc	cgatttcggc	ctattggta	aaaaatgagc	tgatttaaca	780
aaaatttaac	gcgaatttta	acaaaatatt	aacgcttaca	atttcctgat	gcggtat	840
ctccttacgc	atctgtgcgg	tatttcacac	cgcatacgcg	gatctgcgca	gcaccatggc	900
ctgaaataac	ctctgaaaga	ggaacttggt	taggtacctt	ctgaggcgga	aagaaccagc	960
tgtggaatgt	gtgtcagttt	gggtgtggaa	agtccccagg	ctccccagca	ggcagaagta	1020
tgcaaagcat	gcatctcaat	tagtcagcaa	ccaggtgtgg	aaagtccccca	ggctccccag	1080
caggcagaag	tatgcaaagc	atgcatctca	attagtcagc	aaccatagtc	ccgccccctaa	1140
ctccgccc	cccgccccctaa	actccgcccc	gttccgcccc	ttctccgccc	catggctgac	1200
taatttttt	tattnatgca	gaggccgagg	ccgcctcg	ctctgagcta	ttccagaagt	1260
agtgaggagg	cttttttggaa	ggcctaggct	tttgcaaaaa	gcttgattct	tctgacacaa	1320
cagtctcgaa	cttaaggcta	gagccaccat	gattgaacaa	gatggattgc	acgcagggttc	1380
tccggccgct	tggtgtggaga	ggctattcg	ctatgactgg	gcacaacaga	caatggctg	1440
ctctgatgcc	gccgtgttcc	ggctgtcagc	gcaggggcgc	ccggttcttt	ttgtcaagac	1500
cgacctgtcc	ggtgccc	atgaactgca	ggacgaggca	gchgctat	cgtggctggc	1560
cacgacgggc	gttccttg	cagctgtct	cgacgttg	actgaagcgg	gaaggactg	1620
gctgctattt	ggcgaagtgc	cggggcagga	tctcctgtca	tctcacctt	ctcctgcccga	1680
gaaagtatcc	atcatggctg	atgcaatgc	gcggctgcat	acgcttgc	cgctcac	1740
cccattcgac	caccaagcga	aacatcgcat	cgagcgagca	cgtactcg	tggaagccgg	1800
tcttgcgt	caggatgatc	tggacgaaga	gcatcagggg	ctcgcc	ccgaactgtt	1860
cgcaggctc	aaggcgcgca	tgcccacgg	cgaggatctc	gtcgtgaccc	atggcgtgc	1920
ctgcttgc	aatatcatgg	tggaaaatgg	ccgctttct	ggattcatgc	actgtggccg	1980
gctgggtgt	gcggaccgct	atcaggacat	agcgttg	accgtgata	ttgctgaaga	2040
gcttggccgc	aatgggctg	accgcttct	cgtgtttac	ggtatcgccg	ctcccattc	2100
gcagcgc	gccttctatc	gccttctga	cgagttttc	tgagcgggac	tctgggttc	2160
gaaatgaccg	accaagcgc	gcccaacctg	ccatcacgt	ggccgcaata	aaatatctt	2220
attttcatta	catctgtgt	ttggttttt	gtgtgaatgc	atagcgataa	ggatccgcgt	2280
atggtgtcact	ctcagtacaa	tctgctctga	tgccgcata	ttaagccgc	ccgcacaccc	2340
gccaacaccc	gctgacgcgc	cctgacgggc	ttgtctgctc	ccggcatccg	cttacagaca	2400
agctgtgacc	gtctccggga	gctgcatgt	tcagagg	ttt	tcaccgtcat	2460
cgcgagacga	aagggcctcg	tgatacgcct	attttata	gttaatgtca	tgataataat	2520

10165-022-999 (substitute - 6-16-08) .txt
ggtttcttag acgtcaggtg gcactttcg gggaaatgtg cgcgaaaccc ctattgttt 2580
attnnnctaa atacattcaa atatgtatcc gctcatgaga caataaccct gataaatgct 2640
tcaataatat tgaaaaagga agagtatgag tattcaacat ttccgtgtcg cccttattcc 2700
ctttttgcg gcatttgcc ttcctgttt tgctcaccca gaaacgctgg tgaaagtaaa 2760
agatgctgaa gatcagttgg gtgcacgagt gggttacatc gaactggatc tcaacagcgg 2820
taagatcctt gagagtttc gccccgaaga acgtttcca atgatgagca cttttaaagt 2880
tctgctatgt ggcgcggtat tatccgtat tgacgccgg caagagcaac tcggtcggcg 2940
catacactat tctcagaatg acttgggtga gtactcacca gtcacagaaa agcatcttac 3000
ggatggcatg acagtaagag aattatgcag tgctgccata accatgagtg ataacactgc 3060
ggccaactta ctctgacaa cgatcgagg accgaaggag ctaaccgctt tttgcacaa 3120
catggggat catgtaactc gccttgcattc ttggaaaccg gagctgaatg aagccataacc 3180
aacgcacgag cgtgacacca cgatgcctgt agcaatggca acaacgttgc gcaaactatt 3240
aactggcgaa ctacttactc tagcttcccgc gcaacaattt atagactgga tggaggcgga 3300
taaagttgca ggaccacttc tgcgctcgcc cttccggct ggctgggtta ttgctgataa 3360
atctggagcc ggtgagcgtg ggtctcgccg tatcattgca gcactgggc cagatggtaa 3420
gccctcccgat atcgttagtta tctacacgac ggggagtcag gcaactatgg atgaacgaaa 3480
tagacagatc gctgagatag gtgcctcaact gattaagcat tggtaactgt cagaccaagt 3540
ttactcataat atactttaga ttgattttttt acttcatttt taattttttt ggatcttaggt 3600
gaagatcctt ttgataatc tcatgaccaa aatcccttaa cgtgagttt cgttccactg 3660
agcgtcagac cccgtagaaa agatcaaagg atcttcttgc gatcctttt ttctgcgcgt 3720
aatctgctgc ttgcaaacaa aaaaaccacc gctaccagcg gtggttgtt tgccggatca 3780
agagctacca actcttttc cgaaggtaac tggcttcagc agagcgcaga taccaaatac 3840
tgttcttcta gtgttagccgt agttaggcca ccacttcaag aactctgttag caccgcctac 3900
atacctcgct ctgctaattcc tgttaccagt ggctgctgcc agtggcgata agtcgtgtct 3960
taccgggttg gactcaagac gatagttacc ggataaggcg cagcggtcgg gctgaacggg 4020
gggttcgtgc acacagccca gcttggagcg aacgacctac accgaactga gataacctaca 4080
gcgtgagcta tgagaaagcg ccacgcttcc cgaaggggaga aaggcggaca ggtatccgg 4140
aagcggcagg gtcggAACAG gagagcgcac gagggagctt ccagggggaa acgcctggta 4200
tctttatagt cctgtcggtt ttgcaccct ctgacttgcg cgtcgatTTT tggatgtctc 4260
gtcagggggg cggagcctat ggaaaaacgc cagcaacgcg gccttttac gggtcctggc 4320
cttttgcgtgg cttttgcgtc acatggctcg acagatcttca aatattggcc attagccata 4380
ttattcattt gttatatacg ataaatcaat attggctatt ggccattgca tacgttgtat 4440

10165-022-999 (substitute - 6-16-08) .txt

ctataatcata atatgtacat ttatattggc tcatgtccaa tatgaccgcc atgttggcat	4500
tgattattga ctagttatta atagtaatca attacggggt cattagttca tagcccatat	4560
atggagttcc gcgttacata acttacggta aatggcccgc ctggctgacc gcccaacgac	4620
ccccgccccat tgacgtcaat aatgacgtat gttcccatag taacgccaat agggacttcc	4680
cattgacgtc aatgggtgga gtatTTacgg taaaactgccc acttggcagt acatcaagt	4740
tatcatatgc caagtccgcc ccctattgac gtcaatgacg gtaaatggcc cgccTggcat	4800
tatgcccagt acatgaccctt acgggacttt cctacttggc agtacatcta cgtattagtc	4860
atcgcttatta ccatggtgat gcggTTTgg cagtacacca atgggcgtgg atagcggttt	4920
gactcacggg gatTTccaag tctccacccc attgacgtca atgggagttt gtttggcac	4980
caaaatcaac gggactttcc aaaatgtcgt aacaactgcg atcgcccgc ccgttgcgc	5040
aaatgggcgg taggcgtgta cggTggagg tctatataag cagagctcg ttagtgaacc	5100
gtcagatcac tagaagcttt attgcggtag tttatcacag ttaaattgct aacgcagtca	5160
gtgcttctga cacaacagtc tcgaacttaa gctgcagtga ctctcttaag gtagccttgc	5220
agaagtttgt cgtgaggcac tggcaggtta agtatcaagg ttacaagaca ggtttaagga	5280
gaccaataga aactgggctt gtcgagacag agaagactct tgcgttctg ataggcacct	5340
attggtctta ctgacatcca cttgccttt ctctccacag gtgtccactc ccagttcaat	5400
tacagctt aaggctagag tacttaatac gactcactat aggctagcct cgagcgcgga	5460
gatgggggtg cacgaatgtc ctgcctggct gtggcttctc ctgtccctgc tgtcgctccc	5520
tctgggcctc ccagtcctgg gcgcCcacc acgcctcatc tgtgacagcc gagtcctgga	5580
gaggtacctc ttggaggcca aggaggccga gaatatcag acgggctgta atgaaacctg	5640
cagcttgaat gagaatatca ctgtcccaga caccAAgtt aatttctatg cctggaagag	5700
gatggaggtc gggcagcagg ccgtagaagt ctggcaggc ctggccctgc tgtcggaagc	5760
tgtcctgcgg ggccaggccc tgggttcaa ctctccctag ccgtgggagc ccctgcagct	5820
gcatgtggat aaagccgtca gtggcTTcg cagcctcacc actctgcttc gggctctgcg	5880
agcccagaag gaagccatct cccctccaga tgcggcctca gctgctccac tccgaacaat	5940
cactgctgac actttccgca aactcttccg agtctactcc aatttccctcc ggggaaagct	6000
gaagctgtac acagggagg cctgcaggac aggggaccat catcaccatc accattgat	6059

<210> 210
<211> 6059
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: plasmid
Page 86

10165-022-999 (substitute - 6-16-08) .txt

<400>	210					
ctagagtgc	cccgggcggc	cgcttccctt	tagtgagggt	taatgcttcg	agcagacatg	60
ataagataca	ttgatgagtt	tggacaaacc	acaactagaa	tgcagtgaaa	aaaatgcttt	120
atttgtgaaa	tttgtgatgc	tattgctta	tttgtaacca	ttataagctg	caataaacaa	180
gttaacaaca	acaattgcat	tcattttatg	tttcaggttc	agggggagat	gtgggagggtt	240
ttttaaagca	agtaaaacct	ctacaaatgt	ggtaaaatcc	gataaggatc	gatccgggct	300
ggcgtaatag	cgaagaggcc	cgcaccgatc	gcccttcca	acagttgcgc	agcctgaatg	360
gcgaatggac	gcgcctgta	gcggcgcatt	aagcgcggcg	ggtgtggtgg	ttacgcgcag	420
cgtgaccgct	acacttgcca	gcgccttagc	gcccgctcct	ttcgcttct	tcccttcctt	480
tctcgccacg	ttcgccggct	ttccccgtca	agctctaaat	cggggctcc	ctttagggtt	540
ccgatttagt	gctttacggc	acctcgaccc	aaaaaaactt	gattagggtg	atggttcacg	600
tagtggcca	tcgcccgtat	agacggttt	tcgcccctt	acgttggagt	ccacgttctt	660
taatagtgga	ctcttgttcc	aaactggaac	aacactcaac	cctatctcgg	tctattcttt	720
tgatttataa	gggattttgc	cgatttcggc	ctattggta	aaaaatgagc	tgatttaaca	780
aaaatttaac	gcgaatttta	acaaaatatt	aacgcttaca	atttcctgat	gcggtatttt	840
ctccttacgc	atctgtgcgg	tatttcacac	cgcatacgcg	gatctgcgc	gcaccatggc	900
ctgaaataac	ctctgaaaga	ggaacttgg	tagtacctt	ctgaggcgg	aagaaccagc	960
tgtggaatgt	gtgtcagtt	gggtgtggaa	agtccccagg	ctccccagca	ggcagaagta	1020
tgcaaagcat	gcatctcaat	tagtcagcaa	ccaggtgtgg	aaagtcccc	ggctccccag	1080
cagggagaag	tatgcaaagc	atgcatctca	attagttagc	aaccatagtc	ccgcccctaa	1140
ctccgccccat	cccgccccata	actccgcccc	gttccgcccc	ttctccgccc	catggctgac	1200
taatttttt	tattnatgca	gaggccgagg	ccgcctcggc	ctctgagcta	ttccagaagt	1260
agtgaggagg	cttttttgg	ggcctaggct	tttgcaaaaa	gcttgattct	tctgacacaa	1320
cagtctcgaa	cttaaggcta	gagccaccat	gattgaacaa	gatggattgc	acgcaggttc	1380
tccggccgct	tgggtggaga	ggctattcgg	ctatgactgg	gcacaacaga	caatcggtcg	1440
ctctgatgcc	gccgtgttcc	ggctgtcagc	gcaggggcgc	ccggttcttt	ttgtcaagac	1500
cgacctgtcc	ggtgcctga	atgaactgca	ggacgaggca	gcgcggctat	cgtggctggc	1560
cacgacgggc	gttccctg	cagctgtgct	cgacgttg	actgaagcgg	gaagggactg	1620
gctgctattg	ggcgaagtgc	cggggcagga	tctcctgtca	tctcacctt	ctcctgcccga	1680
gaaagtatcc	atcatggctg	atgcaatgcg	gcggctgatc	acgcttgc	cgctacctg	1740
cccattcgac	caccaaggcga	aacatcgat	cgagcgagca	cgtactcgga	tggaagccgg	1800
tcttgtcgat	caggatgatc	tggacgaaga	gcatcagggg	ctcgccag	ccgaactgtt	1860

10165-022-999 (substitute - 6-16-08) .txt

cgccaggctc aaggcgcgca tgcccgacgg cgaggatctc gtcgtgaccc atggcgatgc	1920
ctgcttgccg aatatcatgg tggaaaatgg ccgcctttct ggattcatcg actgtggccg	1980
gctgggtgtg gcggaccgct atcaggacat agcgttggct acccgtgata ttgctgaaga	2040
gcttggcggc gaatgggctg accgccttcc cgtgcattac ggtatcgccg ctcccgattc	2100
gcagcgcattc gccttctatc gccttcttga cgagtttttc tgagcggac tctgggttc	2160
gaaatgaccg accaagcgac gcccaacctg ccatcacgat ggccgcaata aaatatctt	2220
attttcatta catctgtgtg ttggttttt gtgtgaatcg atagcgataa ggatccgcgt	2280
atggtgact ctcagtacaa tctgctctga tgccgcatag ttaagccagc cccgacaccc	2340
gccaacaccc gctgacgcgc cctgacgggc ttgtctgctc ccggcatccg cttacagaca	2400
agctgtgacc gtctccggga gctgcatgtg tcagaggtt tcaccgtcat caccgaaacg	2460
cgcgagacga aagggcctcg tgatacgcct attttatag gttaatgtca tgataataat	2520
ggtttcttag acgtcaggtg gcactttcg gggaaatgtg cgcggAACCC ctatttgttt	2580
attttctaa atacattcaa atatgtatcc gctcatgaga caataaccct gataaatgct	2640
tcaataatat tgaaaaagga agagtatgag tattcaacat ttccgtgtcg cccttattcc	2700
ctttttgcg gcattttgcc ttccgtttt tgctcaccca gaaacgctgg tgaaagtaaa	2760
agatgctgaa gatcagttgg gtgcacgagt gggttacatc gaactggatc tcaacagcgg	2820
taagatcctt gagagtttc gccccgaaga acgtttcca atgatgagca cttttaaagt	2880
tctgctatgt ggcgcggat tatccgtat tgacgcccgg caagagcaac tcggcgcgg	2940
catacactat tctcagaatg acttgggtga gtactcacca gtcacagaaa agcatttac	3000
ggatggcatg acagtaagag aattatgcag tgctgccata accatgagtg ataacactgc	3060
ggccaaactta cttctgacaa cgatcgagg accgaaggag ctaaccgctt tttgcacaa	3120
catggggat catgtaactc gccttgcgtg ttggaaaccg gagctgaatg aagccatacc	3180
aaacgacgag cgtgacacca cgatgcctgt agcaatggca acaacgttgc gcaaactatt	3240
aactggcgaa ctacttactc tagcttcccg gcaacaatta atagactgga tggaggcgg	3300
taaagttgca ggaccacttc tgcgctcggc cttccggct ggctggtttta ttgctgataa	3360
atctggagcc ggtgagcgtg ggtctcgccg tatcattgca gcactggggc cagatggtaa	3420
gccctccgt atcgttagtta tctacacgac ggggagtcag gcaactatgg atgaacgaaa	3480
tagacagatc gctgagatag gtgcctcact gattaagcat tgtaactgt cagaccaagt	3540
ttactcatat atactttaga ttgattaaa acttcatttt taatttaaaa ggatcttagt	3600
gaagatcctt tttgataatc tcatgaccaa aatccctaa cgtgagttt cgttccactg	3660
agcgtcagac cccgtagaaa agatcaaagg atcttcttga gatcctttt ttctgcgcgt	3720

10165-022-999 (substitute - 6-16-08) .txt

aatctgctgc	ttgcaaacaa	aaaaaccacc	gctaccagcg	gtggtttgtt	tgccggatca	3780
agagctacca	actcttttc	cgaaggtaac	tggcttcagc	agagcgcaga	taccaaatac	3840
tgttcttcta	gtgttagccgt	agttaggcca	ccacttcaag	aactctgtag	caccgcctac	3900
atacctcgct	ctgctaattcc	tgttaccagt	ggctgctgcc	agtggcgata	agtcgtgtct	3960
taccgggttg	gactcaagac	gatagttacc	ggataaggcg	cagcggtcgg	gctgaacggg	4020
gggttcgtgc	acacagccca	gcttgagcg	aacgacctac	accgaactga	gataacctaca	4080
gcgtgagcta	tgagaaaagcg	ccacgcttcc	cgaagggaga	aaggcggaca	ggtatccggt	4140
aagcggcagg	gtcggAACAG	gagagcgcac	gagggagctt	ccagggggaa	acgcctggta	4200
tctttatagt	cctgtcggtt	ttcgccacct	ctgacttgag	cgtcgatttt	tgtgatgctc	4260
gtcaggggggg	cggagcctat	ggaaaaacgc	cagcaacgcg	gccttttac	ggttcctggc	4320
cffffgtgg	cctttgctc	acatggctcg	acagatcttc	aatattggcc	attagccata	4380
ttattcattt	gttatatagc	ataaaatcaat	attggctatt	ggccatttca	tacgttgtat	4440
ctataatcata	atatgtacat	ttatattggc	tcatgtccaa	tatgaccgccc	atgttggcat	4500
tgattattga	ctagttatta	atagtaatca	attacgggtt	cattagttca	tagcccatat	4560
atggagttcc	gcgttacata	acttacggta	aatggcccgcc	ctggctgacc	gcccaacgac	4620
ccccggccat	tgacgtcaat	aatgacgtat	gttcccatag	taacgccaat	agggactttc	4680
cattgacgtc	aatgggtgga	gtatTTACGG	taaactgccc	acttggcagt	acatcaagtg	4740
tatcatatgc	caagtccgccc	ccctatttgc	gtcaatgacg	gtaaatggcc	cgcctggcat	4800
tatgcccagt	acatgacccctt	acgggacttt	cctacttggc	agtacatcta	cgtattagtc	4860
atcgcttattt	ccatgggtat	gcgggtttgg	cagtacacca	atggggcgtgg	atagcggttt	4920
gactcacggg	gatttccaaag	tctccacccc	attgacgtca	atgggagttt	gttttggcac	4980
caaaatcaac	gggactttcc	aaaatgtcgt	aacaactgcg	atcgcccgcc	ccgttgcacgc	5040
aaatgggcgg	taggcgtgta	cgggtggagg	tctatataag	cagagctcgt	ttagtgaacc	5100
gtcagatcac	tagaagcttt	attgcggtag	tttatcacag	ttaaattgct	aacgcagtca	5160
gtgcttctga	cacaacagtc	tcgaacttaa	gctgcagtga	ctctcttaag	gtgccttgc	5220
agaagttgggt	cgtgaggcac	tgggcaggta	agtatcaagg	ttacaagaca	ggttaagga	5280
gaccaataga	aactgggctt	gtcgagacag	agaagactct	tgcgtttctg	ataggcacct	5340
attggcttta	ctgacatcca	ctttgccttt	ctctccacag	gtgtccactc	ccagttcaat	5400
tacagctttt	aaggcttagag	tacttaatac	gactcaactat	aggcttagcct	cgagcgcgga	5460
gatgggggtt	cacgaatgtc	ctgcctggct	gtggcttctc	ctgtccctgc	tgtcgctccc	5520
tctgggcctc	ccagtcctgg	gcgcggccacc	acgcctcatc	tgtgacagcc	gagtccctgga	5580
gaggtacctc	ttggaggcca	aggaggccga	gaatatcacg	acgggctgtg	ctgaacactg	5640

10165-022-999 (substitute - 6-16-08) .txt

cagcttgaat gagaatatca	ctgtcccaga caccgacgtt	aatttctatg cctggaagag	5700	
gatggaggc	gggcagcagg ccgtagaagt	ctggcagggc ctggccctgc	tgtcgaaagc	5760
tgtccctgcgg	ggccaggccc ttttgtcaa	ctcttcccag ccgtgggagc	ccctgcagct	5820
gcatgtggat	aaagccgtca gtggccttcg	cagcctcacc actctgcttc	gggctctgcg	5880
agcccagaag	gaagccatct cccctccaga	tgcggcctca gctgctccac	tccgaacaat	5940
cactgctgac	actttccgca aactcttccg	agtctactcc aatttccctcc	ggggaaagct	6000
gaagctgtac	acaggggagg cctgcaggac	aggggaccat catcaccatc	accattgat	6059

<210> 211
<211> 6059
<212> DNA
<213> Artificial

<220>
<223> Description of Artificial Sequence: plasmid

<400> 211	ctagagtcga cccgggcggc	cgcttccctt tagtgagggt	taatgcttcg agcagacatg	60
ataagataca ttgatgagtt	tggacaaacc acaactagaa	tgcagtgaaa aaaatgcttt	120	
atttgtgaaa tttgtatgc	tattgttta tttgtAACCA	ttataagctg caataaacaa	180	
gttaacaaca acaattgcat	tcattttatg tttcagggttc	agggggagat gtgggagggtt	240	
ttttaaagca agtaaaacct	ctacaaatgt ggtaaaatcc	gataaggatc gatccgggct	300	
ggcgtaatag cgaagaggcc	cgcaccgatc gccctccca	acagttgcgc agcctgaatg	360	
gcgaatggac gcgcctgt	gcggcgcatt aagcgcggcg	ggtgtggtgg ttacgcgcag	420	
cgtgaccgct acacttgcca	gcgccttagc gcccgcctt	ttcgctttct tcccttcctt	480	
tctcgccacg ttccggcgt	ttccccgtca agctctaaat	cgggggctcc ctttagggtt	540	
ccgatttagt gcttacggc	acctcgaccc caaaaaactt	gattagggtg atggttcacg	600	
tagtggcca tcgcctgat	agacggttt tcgcctttg	acgttggagt ccacgttctt	660	
taatagtgga ctcttgttcc	aaactggaac aacactcaac	cctatctcggtctt	720	
tgattataa gggatttgc	cgatttcggc ctattggta	aaaaatgagc tgatttaaca	780	
aaaatttaac gcgaatttta	acaaaatatt aacgcttaca	atttcctgat gcggtatTTT	840	
ctccttacgc atctgtgcgg	tatttcacac cgcatcgcg	gatctgcgcgca gcaccatggc	900	
ctgaaataac ctctgaaaga	ggaacttgggt	tagtacctt ctgaggcggaa aagaaccagc	960	
tgtggaatgt gtgtcagtta	gggtgtggaa agtccccagg	ctccccagca ggcagaagta	1020	
tgcaaagcat gcatctcaat	tagtcagcaa ccaggtgtgg	aaagtccccca ggctccccag	1080	
caggcagaag tatgcaaagc	atgcacatctca attagtcagc	aaccatagtc ccgccccctaa	1140	

10165-022-999 (substitute - 6-16-08) .txt

ctccgccccat cccgccccata actccgccccaa gttccgccccaa ttctccgccccaa catggctgac	1200
taattttttt tatttatgca gagggccgagg ccgcctcgcc ctctgagcta ttccagaagt	1260
agttagggagg cttttttggaa ggcctaggct tttgcaaaaa gcttgattct tctgacacaa	1320
cagtctcgaa cttaaggcta gagccaccat gattgaacaa gatggattgc acgcaggttc	1380
tccggccgct tgggtggaga ggctattcgg ctatgactgg gcacaacaga caatcggtg	1440
ctctgatgcc gccgtgttcc ggctgtcagc gcaggggcgc ccggttcttt ttgtcaagac	1500
cgacctgtcc ggtgccccta atgaactgca ggacgaggca gcgcggctat cgtggctggc	1560
cacgacgggc gttccttgcg cagctgtgct cgacgttgc actgaagcgg gaagggactg	1620
gctgctattt ggcgaagtgc cggggcagga tctcctgtca tctcaccttgc tccctgcccga	1680
gaaagtatcc atcatggctg atgcaatgcg gcggctgcat acgcttgcattc cggttacactg	1740
cccattcgac caccaagcga aacatcgcat cgagcgagca cgtactcgga tggaagccgg	1800
tcttgcgtat caggatgatc tggacgaaga gcatcagggg ctcgcgccag ccgaactgtt	1860
cgccaggctc aaggcgcgca tgcccacgg cgaggatctc gtcgtgaccc atggcgatgc	1920
ctgcttgcgc aatatcatgg tggaaaatgg ccgcctttct ggattcatcg actgtggccg	1980
gctgggtgtg gcggaccgct atcaggacat agcgttggct acccgtata ttgctgaaga	2040
gcttggccgc gaatgggctg accgccttcc cgtgcatttac ggtatcgccg ctcccgattc	2100
gcagcgcatac gccttctatc gccttcttgcg ctagttcttc tgagcgggac tctggggttc	2160
gaaatgaccg accaagcgcac gcccacccctg ccatcacgat ggccgcaata aaatatctt	2220
attttcatta catctgtgtg ttggttttt gtgtgaatcg atagcgataa ggatccgcgt	2280
atggtgtcact ctcagtacaa tctgctctga tgccgcatacg ttaagccagc cccgacaccc	2340
gccaacaccc gctgacgcgc cctgacgggc ttgtctgctc ccggcatccg cttacagaca	2400
agctgtgacc gtctccggga gctgcatgtg tcagaggaaa tcaccgtcat caccgaaacg	2460
cgcgagacga aagggcctcg tgatacgcct atttttatag gttaatgtca tgataataat	2520
ggtttcttag acgtcagggtg gcaactttcg gggaaatgtg cgccggaccc ctatttgttt	2580
atttttctaa atacattcaa atatgtatcc gctcatgaga caataaccct gataaatgct	2640
tcaataatat tggaaaagga agagtatgag tattcaacat ttccgtgtcg cccttattcc	2700
ctttttgcg gcattttgcc ttccgtttt tgctcacccaa gaaacgctgg tgaaagtaaa	2760
agatgctgaa gatcagttgg gtgcacgagt gggttacatc gaactggatc tcaacacgcgg	2820
taagatcctt gagagtttc gccccgaaga acgtttcca atgatgagca cttttaaagt	2880
tctgctatgt ggcgcggat tatccgtat tgacgccccgg caagagcaac tcgggtcgccg	2940
catacactat tctcagaatg acttgggtga gtactcacca gtcacagaaaa agcatttac	3000
ggatggcatg acagtaagag aattatgcag tgctgcacata accatgagtg ataacactgc	3060

10165-022-999 (substitute - 6-16-08) .txt

ggccaactta	cttctgacaa	cgatcgagg	accgaaggag	ctaaccgctt	tttgcacaa	3120
catggggat	catgtactc	gcctgatcg	ttggAACCG	gagctgaatg	aagccatacc	3180
aaacgacgag	cgtgacacca	cgatgcgt	agcaatggca	acaacgttgc	gcaaactatt	3240
aactggcgaa	ctacttactc	tagcttccc	gcaacaatta	atagactgga	tggaggcgga	3300
taaagtgc	ggaccacttc	tgcgctcggc	ccttccggct	ggctggttt	ttgctgataa	3360
atctggagcc	ggtgagcgtg	ggtctcgcg	tatcattgca	gcactggggc	cagatggtaa	3420
gccctccgt	atcgttagtta	tctacacgac	ggggagtcag	gcaactatgg	atgaacgaaa	3480
tagacagatc	gctgagatag	gtgcctact	gattaagcat	tggtaactgt	cagaccaagt	3540
ttactcatat	atactttaga	ttgatttaaa	acttcatttt	taatttaaaa	ggatcttagt	3600
gaagatcctt	tttgataatc	tcatgacca	aatccctaa	cgtgagttt	cgttccactg	3660
agcgtcagac	cccgtagaaa	agatcaaagg	atcttcttga	gatcctttt	ttctgcgcgt	3720
aatctgctgc	ttgcaaacaa	aaaaaccacc	gctaccagcg	gtggttgtt	tgccggatca	3780
agagctacca	actcttttc	cgaaggtaac	tggcttcagc	agagcgcaga	taccaaatac	3840
tgttcttcta	gtgtagccgt	agtaggc	ccacttcaag	aactctgtag	caccgcctac	3900
atacctcgct	ctgctaattcc	tgttaccagt	ggctgctgcc	agtggcgata	agtcgtgtct	3960
taccgggtt	gactcaagac	gatagttacc	ggataaggcg	cagcggtcgg	gctgaacggg	4020
gggttcgtgc	acacagccc	gcttgagcg	aacgacctac	accgaactga	gataacctaca	4080
gcgtgagcta	tgagaaagcg	ccacgcttcc	cgaaggaga	aaggcggaca	ggtatccggt	4140
aagcggcagg	gtcggAACAG	gagagcgcac	gagggagctt	ccagggggaa	acgcctggta	4200
tctttatagt	cctgtcggtt	ttcgccac	ctgacttgag	cgtcgat	tttgtatgctc	4260
gtcagggggg	cggagcctat	ggaaaaacgc	cagcaacg	gccttttac	ggttcctggc	4320
ctttgctgg	cctttgctc	acatggctcg	acagatctc	aatattggcc	attagccata	4380
ttattcattt	gttatata	ataaatcaat	attggctatt	ggccattgca	tacgttgtat	4440
ctatatcata	atatgtacat	ttatattggc	tcatgtccaa	tatgaccg	atgttggcat	4500
tgattattga	ctagttatta	atagtaatca	attacgggtt	cattagttca	tagccat	4560
atggagttcc	gcgttacata	acttacggta	aatggcccgc	ctggctgacc	gcccaacgac	4620
ccccccccat	tgacgtcaat	aatgacgtat	gttcccata	taacgccaat	agggacttcc	4680
cattgacgtc	aatgggtgga	gtat	ttacgg	taaactgccc	acttggcagt	4740
tatcatatgc	caagtccgc	ccctattgac	gtcaatgacg	gtaaatggcc	cgcctggcat	4800
tatgcccagt	acatgac	ttt	cctacttggc	agtacatcta	cgtattagtc	4860
atcgttattt	ccatggtgat	gcgg	tttgg	cagtacacca	atggcgtgg	4920

10165-022-999 (substitute - 6-16-08) .txt
gactcacggg gatttccaag tctccacccc attgacgtca atgggagttt gttttggcac 4980
caaaatcaac gggactttcc aaaatgtcgt aacaactgcg atcgcccgcc ccgttgacgc 5040
aaatgggcgg taggcgtgta cgggtggagg tctatataag cagagctcgt ttagtgaacc 5100
gtcagatcac tagaagcttt attgcggtag tttatcacag ttaaattgct aacgcagtca 5160
gtgcttctga cacaacagtc tcgaacttaa gctgcagtga ctctcttaag gtagccttgc 5220
agaagtttgt cgtgaggcac tgggcaggta agtatcaagg ttacaagaca ggtttaagga 5280
gaccaataga aactgggctt gtcgagacag agaagactct tgcgtttctg ataggcacct 5340
attggtctta ctgacatcca ctggccttt ctctccacag gtgtccactc ccagttcaat 5400
tacagctctt aaggctagag tacttaatac gactcactat aggctagcct cgagcgcgga 5460
gatgggggtg cacgaatgtc ctgcctggct gtggcttctc ctgtccctgc tgtcgctccc 5520
tctgggcctc ccagtcctgg gcgc(cccacc acgcctcatc tgtgacagcc gagtcctgga 5580
gaggtacctc ttggaggcca aggaggccga gaatatcacf acgggctgtg ctgaacactg 5640
cagcttgaat gagaatatca ctgtcccaga caccaaagtt aatttctatg cctggaagag 5700
gatggaggtc gggcagcagg ccgtagaagt ctggcagggc ctggccctgc tgtcggaagc 5760
tgtccctgcgg ggccaggccc tgggttcaa ctctccctag ccgtgggagc ccctgcagct 5820
gcatgtggat aaagccgtcg agggcattcg cagcctcacc actctgcttc gggctctgcg 5880
agcccagaag gaagccatct cccctccaga tgccgcctca gctgctccac tccgaacaat 5940
cactgctgac actttccgca aactcttccg agtctactcc aatttccctcc ggggaaagct 6000
gaagctgtac acaggggagg cctgcaggac aggggaccat catcaccatc accattgat 6059